Sukup®

FASTIR™

Owner's
Parts and Instruction Manual

Sukup Manufacturing Company
Sheffield, Iowa 50475

9107

LIMITED WARRANTY

Sukup Manufacturing Co. guarantees the products they sell to be of good material properly fabricated and to perform the work for which they are intended when properly installed and operated. In order for this warranty to be in effect, all points on warranty page must have been met and the Warranty Registration mailed within two weeks of installation. Should any part prove defective in material or workmanship to the company's satisfaction, under normal service and use within a period of one year from date of sale, such part will be exchanged immediately F.O.B. Sheffield, Iowa, without charge to the user. This warranty does not obligate Sukup Manufacturing Co. to furnish labor in replacement of defective parts.

Trade accessories are subject to the warranty of their respective manufacturers and are not covered by this guarantee. This guarantee shall be void where equipment has been subject to misuse, neglect, alteration, accident, or improper installation. This guarantee is subject to any existing conditions of supply and demand of products which may directly affect our ability to obtain materials or manufacture replacement parts. The manufacturer shall in no event be liable for consequential damages or contingent liabilities arising from the use or installation of this equipment.

This warranty is in lieu of all other warranties expressed or implied and of all other obligations on our part. No representative or other person is authorized or permitted to make any warranty or assume for this company any liability not strictly in accordance with this guarantee.

Sukup Manufacturing Co. reserves the right to make changes and improvements in its products at any time with the express understanding that such change or improvement does not impose any obligation to install such changes or improvements on products previously manufactured.

TO PREVENT VOIDING WARRANTY: USE ONLY SUKUP STIRRING AUGERS (PAINTED GREEN) AND PARTS.

Sukup Manufacturing Company provides the best warranty in the industry. The stirring auger is the most critical component of a successful stirring machine: Variations in pitch can cause overloading of motors; problems with straightness will cause bearing and electrical connection problems; inadequate hard facing can cause excessive wear, etc. For these reasons Sukup Manufacturing Company can not provide its limited warranty unless all components (including stirring augers) are made by Sukup Mfg. CO.

Contents

SAFETY

RECOGNIZE SAFETY ALERT SYMBOL

The above safety-alert symbol means "ATTENTION! Be Alert! Your personal safety is involved!" This symbol draws your attention to important instructions concerning your personal safety. Read the message carefully to avoid personal injury or death.

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FOLLOW MACHINE SAFETY SIGNS & MESSAGES

Observe safe operating practices. Carefully read this manual and all safety signs on your equipment. Safety signs and shields must be kept in good condition. Replace missing or damaged safety decals and shields; available from **Sukup Mfg. Co., Box 677, Sheffield, Iowa 50475** at no charge with written request from owner.

Learn how to use controls and operate machine. Do not let anyone operate unit (especially teenagers) without thorough training of basic operating and safety procedures.

Make no unauthorized modifications to machine. Modifications may endanger function and/or safety of unit. Periodically check all mechanical and electrical components. Keep unit in good working condition.

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EMERGENCIES - KNOW WHAT TO DO

Have emergency numbers near your telephone:

For doctors:
Emergency medical squad:
Ambulance service:
Hospital:
Fire department:

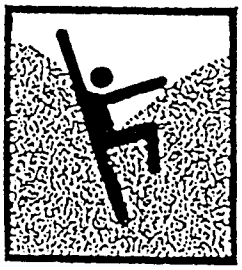
Have written directions to your location:

NEVER ENTER BIN

DANGER: Never enter bin, unless all power is **LOCKED OFF** and another person is present.

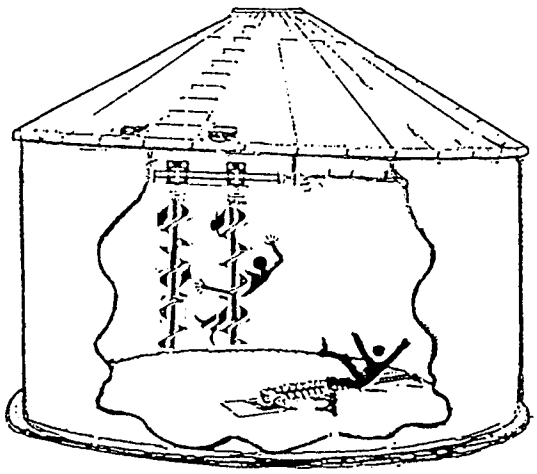
-Rotating augers can kill or dismember!

-Flowing grain may trap and suffocate.



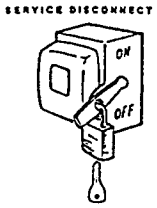
NEVER, NEVER, clean out bin with augers running!

Failure to heed this warning may cause serious injury or death.



CAUTION: To avoid electrocution, all equipment must be properly wired and grounded according to electrical codes. Have unit wired by qualified electrician.

Have your electrician install a main power disconnect switch capable of being locked only in the OFF position. Mark disconnect clearly as to the equipment it operates.



Always **LOCK OFF** main power disconnect switch whenever equipment is not in use or when servicing unit.

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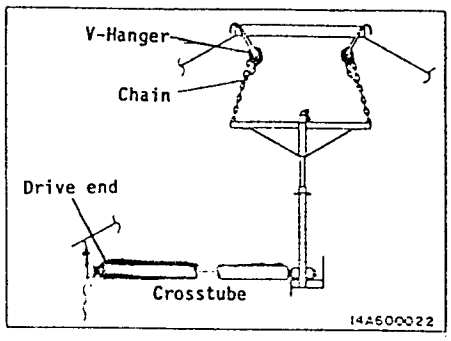
CAUTION: If a ladder is to be placed against crosstube for installation or maintenance, securely wire outside drive end of crosstube to track to avoid movement of unit. (Be sure to remove wire when work is completed.)

Failure to do so may cause serious injury or death.



CAUTION: Chains **MUST BE WRAPPED SEVERAL TIMES** around v-hangers and secured with s-hook. S-hook **CAN NOT** just be hung over v-hanger. Extended periods of stress can cause s-hooks to straighten and drop stirring machine when s-hooks are improperly used. See pg. 10 of installation manual.

Failure to do so may cause serious injury or death.

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CAUTION: When servicing equipment, never enter bin, unless all power is **LOCKED OFF** and another person is present. Always check for power with voltage meter before servicing. To avoid personal injury frequently inspect all mechanical and electrical components. Repair and/or replace warn parts. Be sure all electrical wires are in good condition.

Failure to do so may cause serious injury or death.

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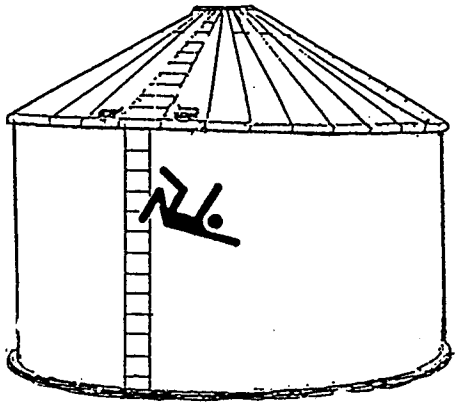
CAUTION: Maintain secure hand and foot holds when climbing on bin. Metal is slippery when wet. Never carry items while climbing on bin to avoid falls.

Failure to do so may cause serious injury or death.



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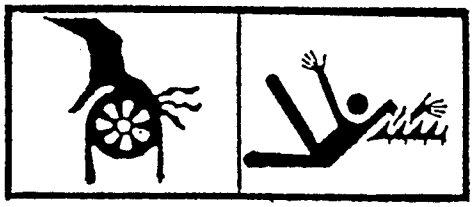
KEEP CLEAR OF ALL MOVING PARTS

Keep people (ESPECIALLY CHILDREN AND TEENAGERS) away from equipment, particularly during operation.



WARNING: Keep away from all moving parts. Keep all shields in place. **SHUT OFF and LOCK OUT** all power and test with voltage meter before servicing.

Failure to follow the above precautions may cause serious injury or death.

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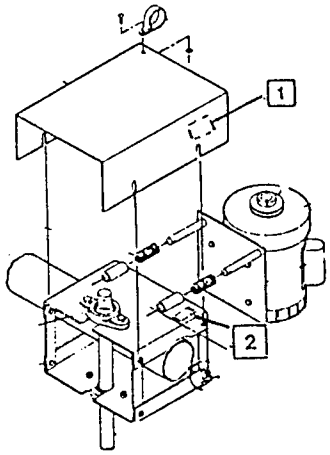
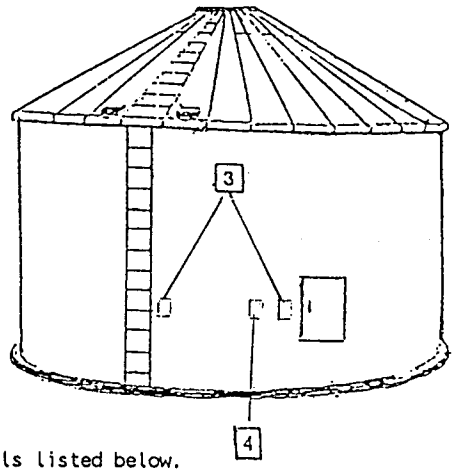




The numbers on the above drawings refer to the location of the safety decals listed below.

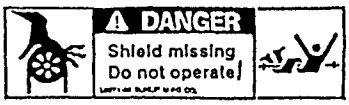
Safety decals #1 and # 2 should be mounted on your equipment as shown on this page. Safety decals #3 and #4 must be mounted during installation. Make sure location area for decal is free from grease, oil and dirt. Remove backing from decal and place in proper position.

IMPORTANT; If suggested locations are not clearly visible, place safety decals in more sutiable area. Never cover up any existing safety decals.

Please check that all decals and shields are in place according to these drawings and in good legible condition. To order replacement decals and shields (no charge) contact your dealer or Sukup Mfg. Co., Box 677, Sheffield, Iowa 50475. Please specify computer number.

1. WARNING - Keep Away From Moving Parts Decal - L0284

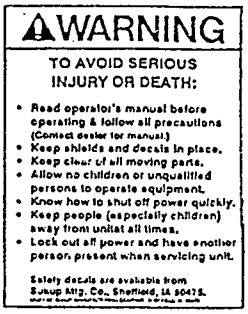
2. Replace Missing Shield Decal - L0271



3. DANGER: Never Enter Bin Decal - L0301

Mount DANGER NEVER ENTER BIN Decal L0301 on bin sheet near door handle and all other entry points or by ladder going up to roof so it will be seen by everyone entering bin.

4. SAFE OPERATION Decal - L0281



Mount SAFE OPERATION decal L0281 on bin sheet near door handle.

⚠ **CAUTION;** To avoid electrocution, all equipment must be properly wired and grounded according to electrical codes. Have unit wired by qualified electrician.

Have your electrician install a main power disconnect switch capable of being locked only in the OFF position. Mark disconnect clearly as to the equipment it operates.

Always LOCK OFF main power disconnect switch whenever equipment is not in use or when servicing unit.

⚠ **CAUTION:** Metal edges are sharp. To avoid injury wear protective clothing and handle equipment and parts with care.

Failure to do so may cause serious injury or death.

INTRODUCTION

This manual contains an illustrated parts catalog and instructions for installation, operation , service of unit. Read carefully and follow instructions.

Parts catalog covers serviceable parts and is broken down into groups for each section of unit.

Parts shown in exploded views of assemblies are reference numbered and correspond to numbers in Ref. No. (Reference Number) column of parts list following each illustration. DO NOT ORDER PARTS BY REFERENCE NUMBERS. Part number and part description are shown with reference numbers. Total number of parts required per unit or assembly is shown opposite each part number.

When ordering parts, always give parts number and part description. If part number can not be found in manual, give clear description of part and its location and function. Specify machine type and size.

Check the shipping list at back of manual. Do you have all components required?

Check carton contents against label on carton.
Is crosstube correct size for bin?

For easiest installation, follow installation steps in order.

TRACK INSTALLATION

NOTE: In many cases, the existing holes in top bin sheet may be used for mounting the track (steps A1-A7). However, in some case, holes will not match and it will be necessary to drill holes to mount track (steps B1-B5).

Track is easiest installed while first ring of bin is being assembled on the ground. It is important that each track size be installed as a unit in the correct size bin, as brackets and curvature vary according to bin diameter.

A. FOR BINS WHERE EXISTING HOLES MATCH TRACK BRACKETS:

NOTE: For bins where existing holes do **NOT** match track brackets see Section B.

1. Insert 1-1/4" bolts in every other hole around top of bin (approximately 18" spacing), for bins smaller than 30'. For bins 30' and larger, place bolts in every hole (approximately 9" spacing) except at seam. Tighten 5/16" spacer nuts onto bolts. Figs. 1 & 2.

2. Mount one length of track over bolts and place a second nut on each top bolt. Do **not tighten** at this time. Figs. 1 and 2.

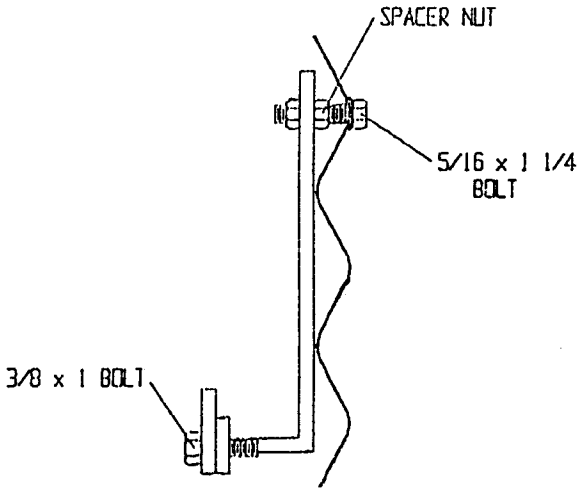


FIG. 1 - TRACK PROFILE - BOLTS

NOTE: On double bracketed track (30'and larger) a gap has been left to prevent interference between seam bolts and track brackets. Install first section of track with seam in place of missing bracket. Fig. 2.

3. Mounting remaining track sections in similar manner.

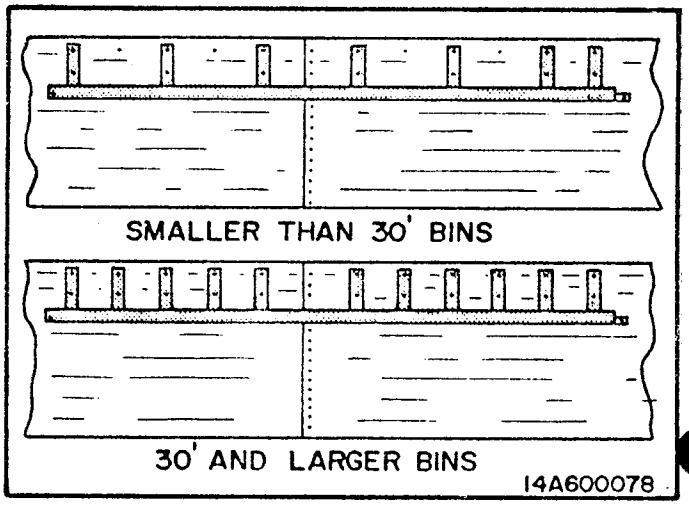


FIG. 2 - SINGLE & DOUBLE BRACKET

4. Join sections together with 3/8" x 1" bolt, lock washer, and nut. Do not tighten at this time. **MAKE SURE THAT THESE BOLTS ARE MOUNTED POINTING OUTWARD TOWARD BIN WALL TO AVOID OBSTRUCTING CROSSTUBE.** Fig. 3

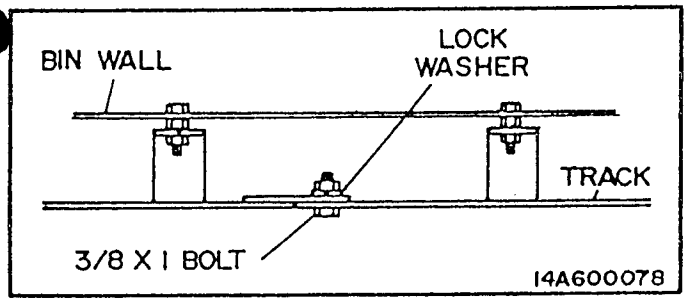


FIG. 3 - TRACK SPLICE.

5. Tighten nuts on top bolts of brackets. Fig.1

6. Tighten bolts at each track splice. When track is completely installed, check joints to be sure track is free from obstructions and smoothly connected.

B. FOR BINS WHERE HOLES FOR TRACK MUST BE PUNCHED IN TOP BIN SHEET:

1. Mount first segment of track in bin, Fig. 1. Punch or drill holes in top sheet to match brackets. Bolt top bolts in place on each bracket of the first track section. Figs. 1 and 2.

2. Mount second segment of track in place. Join sections together with 3/8" x 1" bolt, lockwasher, and nut. Tighten at this time. **MAKE SURE THAT THESE BOLTS ARE MOUNTED POINTING OUTWARD TOWARD BIN WALL TO AVOID OBSTRUCTION CROSSTUBE.** Fig. 3.

3. Mount remaining sections of track in similar manner as steps 1 and 2.

4. Because of the large variation in bin diameters, it may be necessary to insert a splice in order to join the last section of track. These splice sections are available from Sukup Mfg. Co. at no charge.

5. Bolt and secure splice sections in place. Check that the entire length of track and bin wall are free of any obstructions which could hinder movement of crosstube or outside carriage and auger around bin.

PREPARATION FOR ASSEMBLY

1. Carry crosstube and hardware into bin. Place outside drive wheel next to wall; other end in center of bin.

2. Remove tie bar,(double and triple units only) top hanger with chain and pipe (banded to crosstube).

3. Slide carriages onto crosstube as shown on Figure 4A.

4. For double and triple carriage units, bolt tie bars between carriages with 5/16 x 1"bolts. See Fig. 4B Tie bars may have several holes punched in them. Use pair of holes that provide correct spacing between carriages as found on Fig.4B

5. Attach Fastir reversing plates to crosstube. Place inside reversing plate against weld on inner end of crosstube,see Fig. 4A. On single auger machines place the other reversing plate 3" from outer end of weld on outer end of crosstube. On double and triple auger machines, place outerplate the distance shown (A) in Fig. 4A & 4B **Note:** Distance between carriages and placement of reversing plates is critical. Roll carriage to outer and inner end to be certain carriages travel proper distance and will reverse properly.

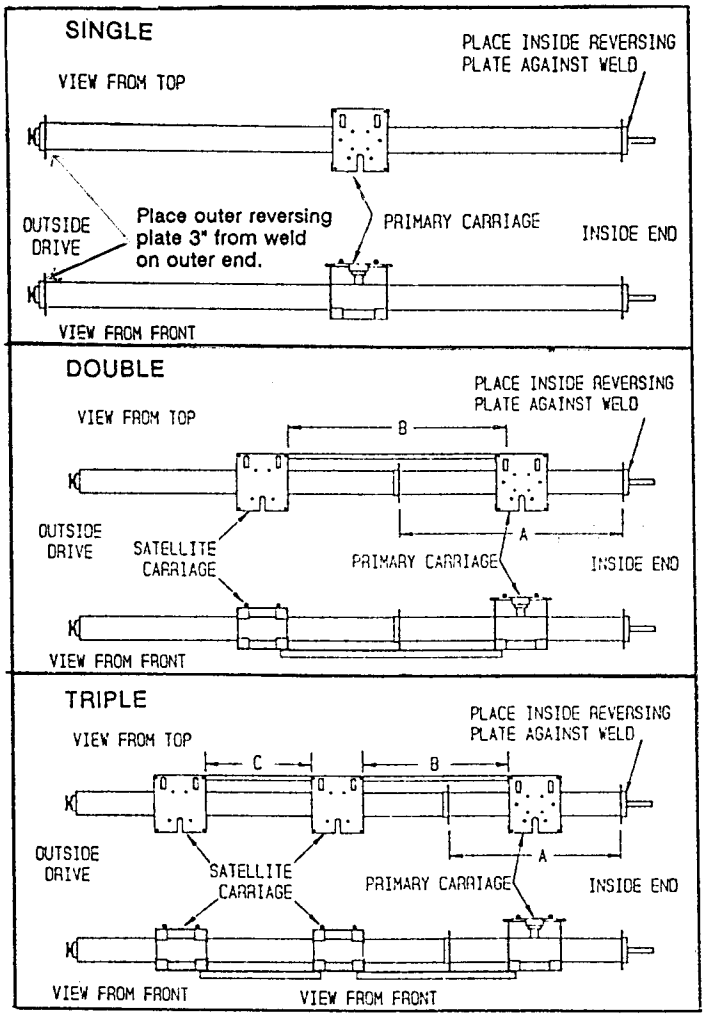
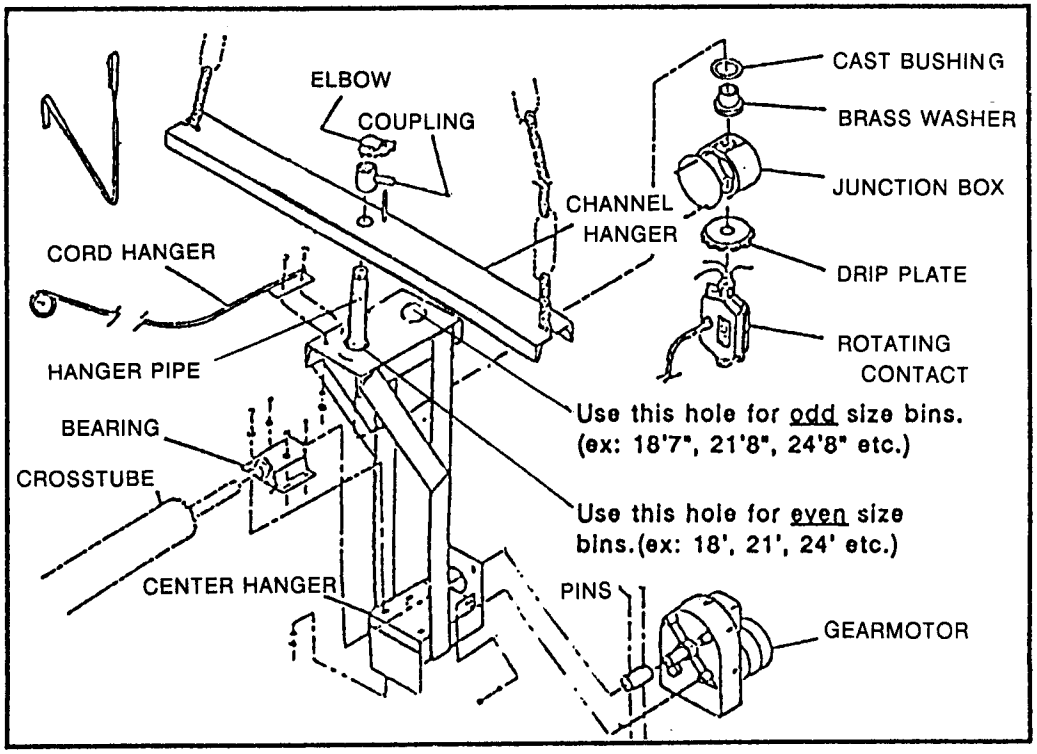


Fig. 4A - TIE BARS & CARRIAGES

BIN DIA	DOUBLE DIS BETWEEN REV PLATES (A)	DOUBLE TIE BAR HOLE TO HOLE (B)	TRIPLE DIS BETWEEN REV PLATES (A)	TRIPLE TIE BAR HOLE TO HOLE (B)	TRIPLE TIE BAR HOLE TO HOLE (C)
18-18'7"	50.5"	44"	37.5"	31"	18"
21-21'8"	59.5"	53"	46.5"	40"	18"
24-24'9"	68.5"	62"	55.5"	49"	18"
27-27'10"	77.5"	71"	64.5"	58"	18"
30-31'	87.5"	81"	74.5"	68"	18"
33-34'	96.5"	90"	83.5"	77"	18"
36-37'1"	106.5"	100"	92.5"	86"	18"

FIGURE 4B TIE BARS FOR FASTIR

INSTALLING CENTER HANGER AND RELATED PARTS



1. Slide shaft of crosstube shown in Fig. 6 through bearing. Loosely bolt bearing to center hanger with 4 - 3/8" x 1" bolts.

2. Bolt gearmotor onto white center hanger with 4 - 5/16" bolts and lockwashers provided on gearmotor.

3. Connect gearmotor shaft to crossutube shaft using 1" tube coupler and 2 - 3/16" x 1-1/2" picker pins. Secure pins with 2 cotter pins. After alignment is completed, tighten 3/8" bolts. Tighten set screw in bearing. Fig. 6

4. Thread hanger pipe onto cast electrical junction box. Make sure to seat threads properly and to tighten well.

BIN DIA.	CROSSTUBE	1ST HANGER	2ND HANGER	CHAIN
DIA.	LENGTH	PIPE	PIPE	LENGTH
18-18'7"	9'	8" A8070	---	5'
21-21'8"	10'6"	8" A5603	18" A8071	5'
24-24'9"	12'1"	8" "	18" "	5'
27-27'10"	13'7"	24" A5604	18" "	5'
30-31'	15'2"	32" A5605	18" "	5'
33-34'	16'8"	32" "	18" "	6'
36-37'1"	18'3"	48" A5607	18" "	6'

(Pipe coupling should be packed in all stirring machine parts sacks.)

The pitch of grain bin roofs vary from 22 degrees to 37 degrees, so stirring machines larger than 18' have two hanger pipes shipped with each unit. The "first hanger pipe" is shipped with the crosstube and top hanger. Use this hanger pipe first and follow installing center hanger and related parts. If the hanger pipe is not the correct length choose one of the following methods to correct the problem:

A. If the "first hanger pipe" is not the correct length substitute the "second hanger pipe" found in hardware carton "A". Make sure to seat threads properly and to tighten well.

B. If "first or second hanger pipe" is not long enough, couple the two pipes together using the REGULAR pipe coupler (NOT coupler with tab) found in the stirring machine parts sack. Make sure to seat threads properly and to tighten well.

Note: Be certain to allow for enough chain on channel hanger to wrap around V-hangers several times, when hanging machine in bin.

5. Slide cast box and pipe (up from bottom) through hole in top of centerhanger. Use offset hole(shown with hanger pipe inserted Fig. 6) for evensized machines 18, 21, 24, etc. Use other hole for 18.7, 21.8, 24.8, etc.

6. Slide channel hanger over hanger pipe and thread coupling onto pipe. Fig. 6. Thread elbow into top of coupling. Make sure to seat threads properly and to tighten well.

7. Place drip plate over threaded end of rotating contact. Thread rotating contact into bottom of cast electrical junction box.

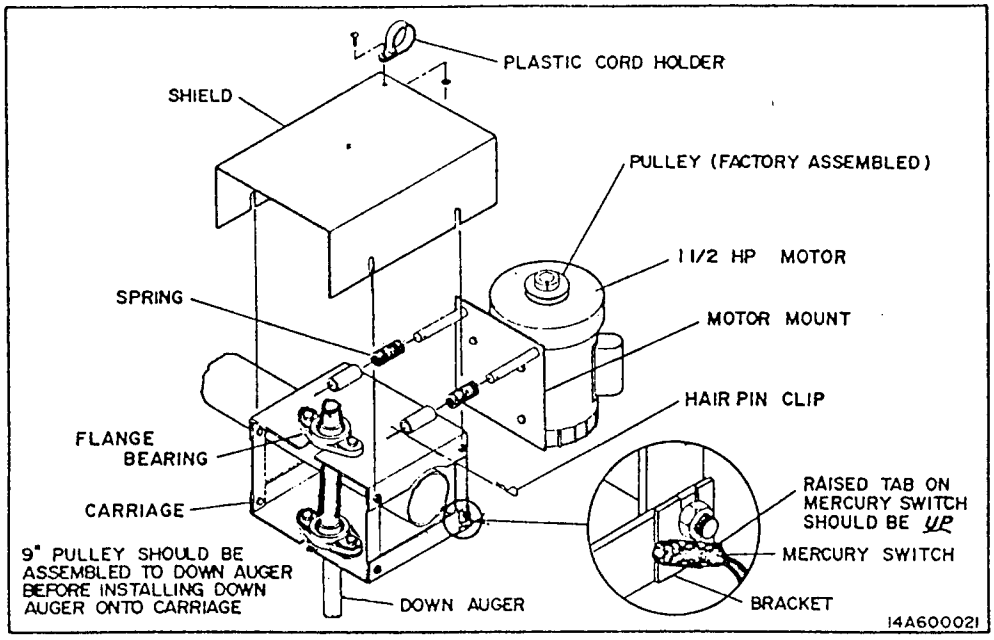


FIG. 7 - ASSEMBLY OF CARRIAGES

INSTALLATION OF CARRIAGES AND RELATED PARTS

1. Bolt cord hanger to top of center hanger with 2 - 3/8" x 1" bolts. **IMPORTANT:** Position cord hanger above and behind direction of travel of crosstube to keep cords away from augers. Fig 6.

2. Bolt junction box onto bottom of primary carriage. Fig. 16

3. On satellite outside and middle carriages, mount mercury switch and bracket to bottom corner carriage bolt shown in Fig 7 . Be sure raised tab on mercury switch is up. Slide bottom of bracket up to and even with bottom carriage plate and secure in place.

4. Assemble 1-1/2hp motors to motor mounts with 4 - 5/16" x 1" bolts.

5. Place one spring on each of the motor mount pegs. Mount motors onto carriages. Place hairpin clip through hole in motor mount peg. Use one clip per carriage. Fig 7

THE SEQUENCE OF MOTORS, STARTING AT THE CENTER OF BIN IS AS FOLLOWS: Fig 10-13

Single auger machine, 1 or 3ph, S
Double auger machine, 1 or 3ph, A-O
Triple auger machine, 1 ph , A-O-O
Triple auger machine, 3 ph , A-B-O

6. Mount belt shields to carriages. **Note:** Shield on primary carriage is different than shields for satellite carriages. Hole for cord holder should be toward motors. Bolt plastic cord holder to each shield.

SETTING UP STIRRING MACHINE INSTALLATION JACKS

1. Place installation jacks over center and side openings of bin roof. Lower cables from jacks and carefully secure cable from center opening jack around hanger pipe just below channel hanger. Secure cable from side opening jack to end of crosstube closest to bin wall.

2. Clamp vise grip onto center cable approximately 3' above channel hanger. Wrap top of each channel hanger chain around each v-hanger. Tape and secure v-hangers to vise grip.

3. Using jacks, raise crosstube approximately 3' off floor or to a comfortable working level.

WARNING Keep people away while using jacks. Falling items may cause serious injury or death. Fasten cable to equipment and make sure jacks are securely anchored. Winch should be securely locked before releasing handle.

Never permit anyone on or under the equipment being moved.

Cable must be securely fastened to the equipment and to the winch drum. Always be sure cable is pulling straight off the winch and not in contact with the frame or drum sides. Always prevent cable from rubbing against fixed objects.

Always inspect cable and hook before each use to be sure they are not damaged. Replace cable if it is frayed or kinked. If cable or hook breaks, cable can act like a whip and can inflict serious injury to anyone in the path of the cable. Never stand along side of cable or guide with your hands. Never operate with wet or oily hands and always use firm grip.

Never leave equipment hanging by the winch while the winch is unattended, as unauthorized persons may attempt to operate the winch thereby creating an unsafe condtion.

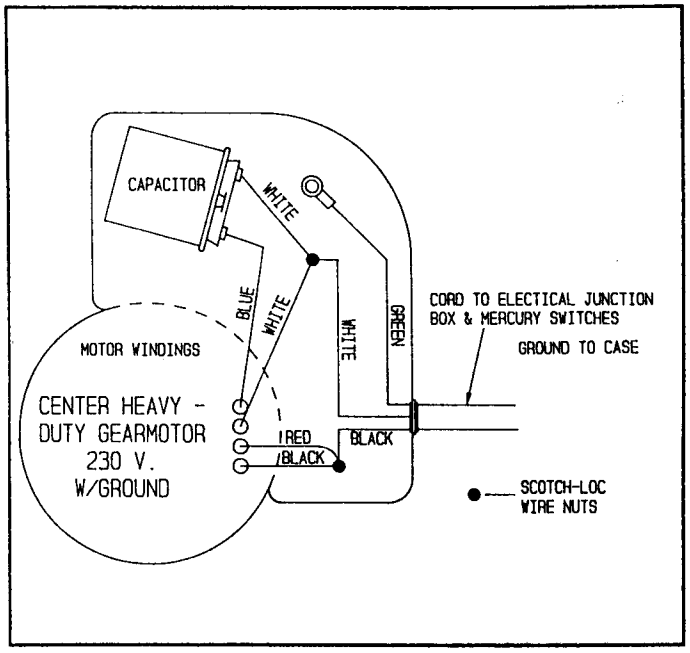


FIG. 8 - GEARMOTOR WIRING

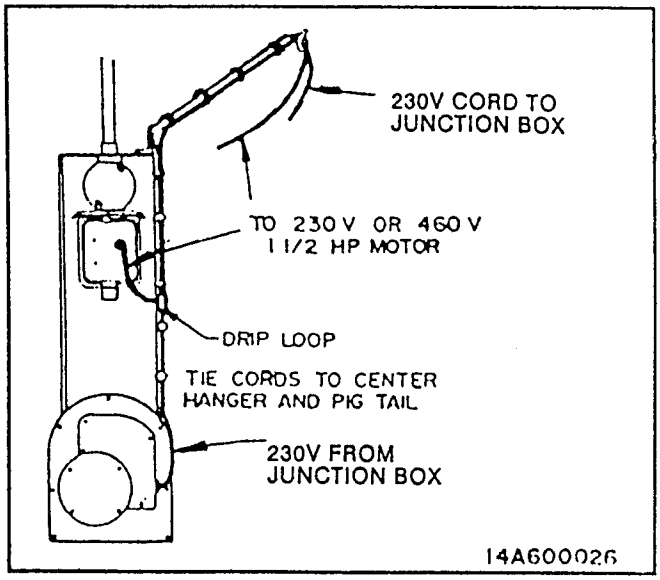


FIG. 9 CENTER HANGER CORDS

WIRING

GEARMOTOR:

1. Take 18-3 cord from junction box on carriage and thread through eye of cord hanger on center hanger. Bring cord down side of center hanger.

2. Take cover off of gearmotor junction box. Place 1/2" electrical connector in hole on gearmotor junction box. Thread cord through connector. Figs. 8 & 9 Provide a drip loop in cord by motor.

3. Take short white wire with female spade and connect to one terminal of capacitor. Take female spade on blue wire from gearmotor and connect to opposite terminal on capacitor.

4. Strip rubber coating back 1/2" on white, red, and black wires from gearmotor.

5. Take white wire from 3 wire cord and white wires from gearmotor and capacitor and scotch lock together.

6. Take black wire and red wire from gearmotor and black wire from 3 wire cord and scotch lock together.

7. Attach green ground wire to gearmotor case using cover screw when replacing cover.

NOTE: Make sure scotch locks are on securely or they can vibrate off during use of machine.

1½ H.P. MOTORS & MERCURY SWITCHES:

1. On 230v machines, take lead(s) from rotating contact, run up center hanger and out to end of cord hanger. Tape cord(s) to hangers. Provide a drip loop by rotating contact, Fig 9. Connect all motors and mercury switches as shown in Figs. 10-13.

NOTE: 460v machines are factory-wired without plug-ins du to the high voltage, and thus all motors are connected before shipment.

2. Mercury switches must be wired in series as shown in Figs. 10-13.

3. Run cords through plastic cord holders as shown. Fig 7 Run connecting cords across tie bars. **Important: Tape cords out of way of all moving parts. Leave enough slack in cords so carrier can travel entire length of crosstube.**

Note: Single phase 3-auger units (or three phase 4-auger units) must use dual lead rotating contact.

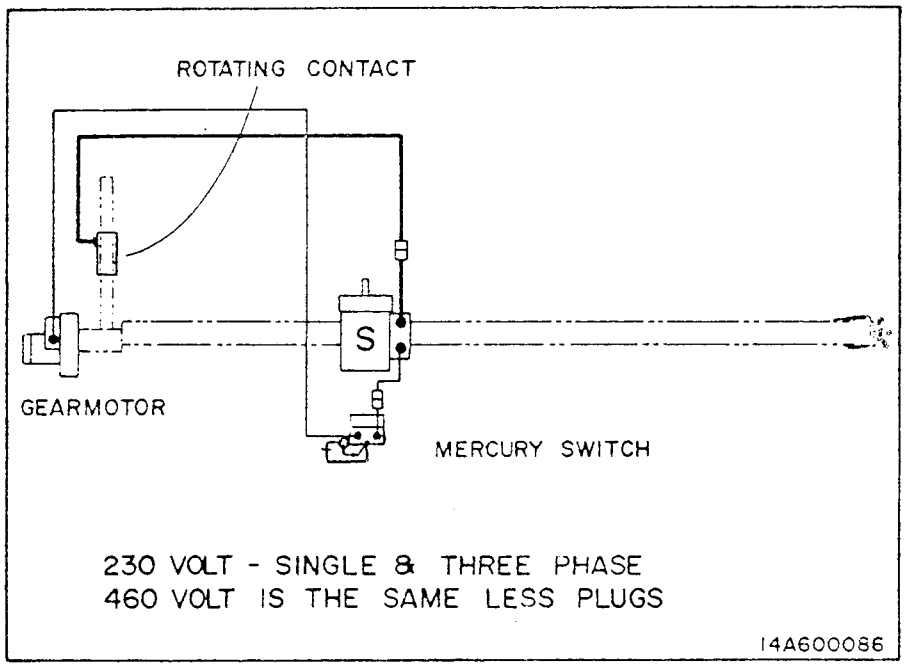


FIG. 10 - SINGLE AUGER MACHINE

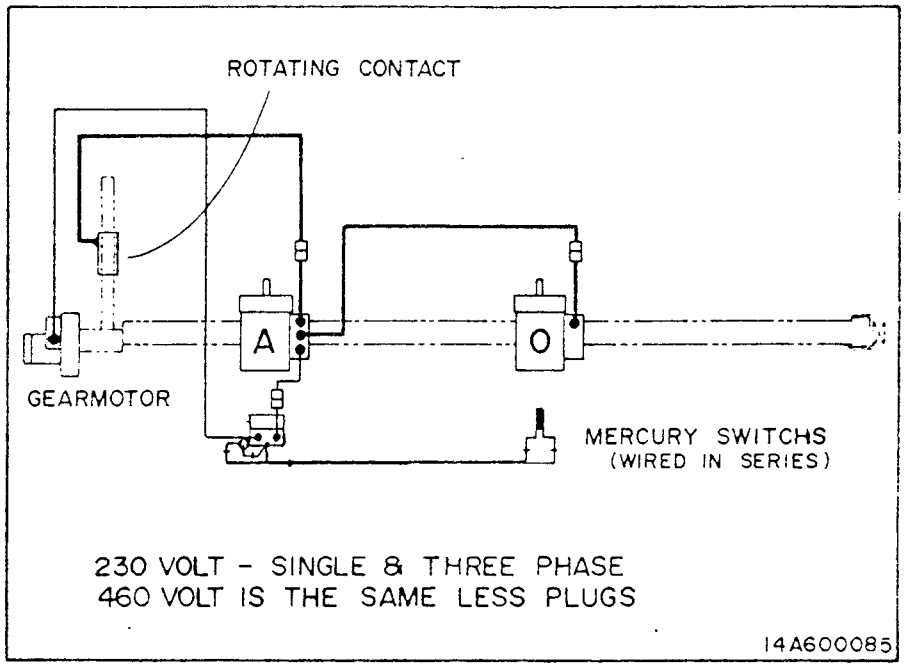


FIG. 11 - DOUBLE AUGER MACHINE

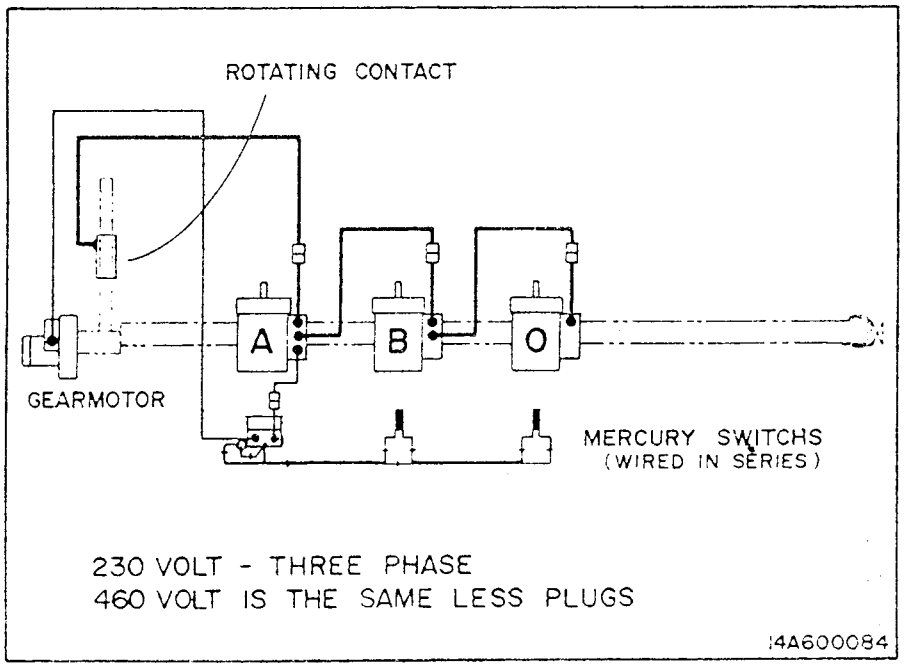


FIG. 12 - TRIPLE AUGER MACHINE 3ph

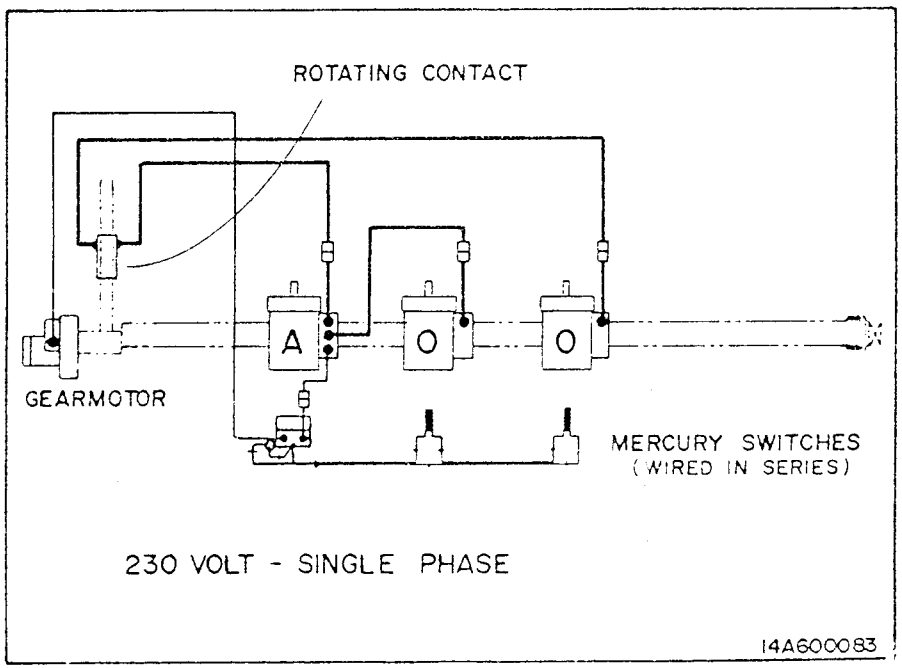


FIG. 13 - TRIPLE AUGER MACHINE 1ph

INSTALLING MACHINE

1. Raise the machine to top of bin so that outer end rests on track.

2. CAUTION: Wire end of crosstube that rests on track securely to track to avoid movement during installation of machine.

3. Remove vise grip and v-hangers from cable. Hook v-hangers over top ring. Fig. 14

4. Wrap chains around v-hangers. Adjust chains so that the crosstube hangs level. Secure s-hooks back to chain. Fig. 14

5. IMPORTANT: Wrap chains several times around v-hangers and place s-hook onto chain. DO NOT merely place s-hook over v-hanger as extended periods of stress can cause them to straighten thus dropping the stirring machine.

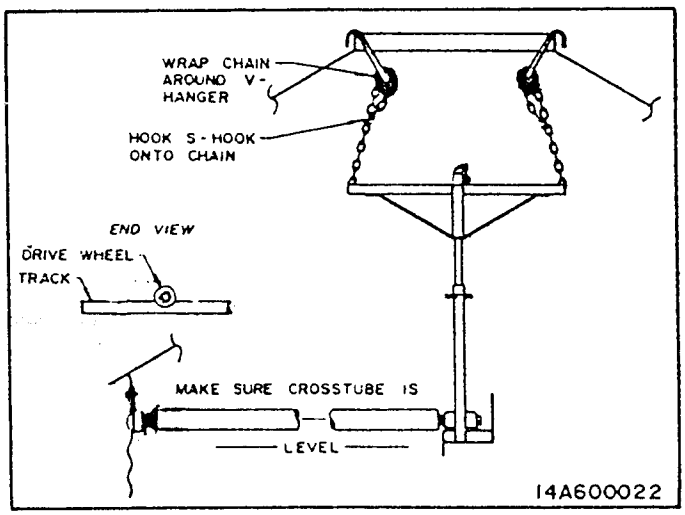
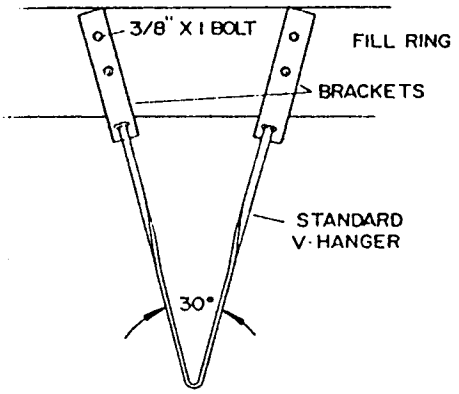


FIG. 14 - LEVELING CROSSTUBE

SUPPLEMENTARY HANGING BRACKET

Protrude slotted end below fill cap ring approximately 1½". Bolt to fill hole ring with two 3/8" x 1" bolts on each bracket. Brackets are mounted approximately on a 30° angle.

OPTIONAL SUPPLEMENTAL HANGING BRACKET - G0125



SPREADING BAR

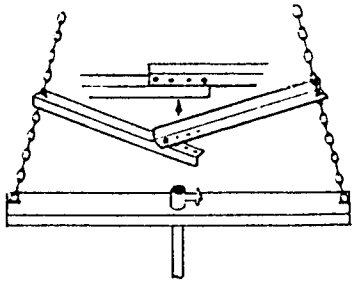
On narrow hatch openings, it may be necessary to spread hanger chains to provide clearance for grain spreader fin. Proceed as follows:

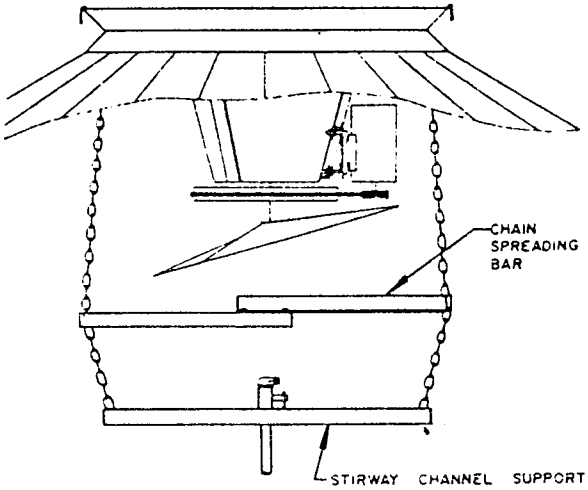
1. Determine clearance needed and place one bolt in proper hole in spreading bar.

2. Place slotted ends of spreading bar on chain as shown and force chains apart by pushing bar straight.

3. Place second bolt in matching holes and tighten both bolts.

IMPORTANT: Be sure spreading bar is far enough below grain spreading fins to avoid fins hitting bar in maximum incline position.





OPTIONAL SPREADER BAR KIT - A5635

PREPARING DOWN AUGERS

1. Cut down augers to length.

NOTE: Down augers must be 3-5" above floor or any unloading equipment which would provide an obstruction at bottom of bin.

a. Before cutting augers, weld or braze flighting slightly above point of cut to prevent unraveling.

b. Where no unloading equipment is used, measure from the top track bracket hole (not track splice hole) to floor. Mark this point and weld before cutting. Down augers should always be cut off from bottom.

NOTE: In some cases, down augers may be cut after installing on machine.

2. Slide the following items over top of each auger shaft in order given. Fig. 15
   a. Flange bearing (hub up)
   b. Locking collar for bearings (groove down)
   c. Flange bearing (hub up)
   d. Locking collar (groove down)
   e. Pulley (hub up)

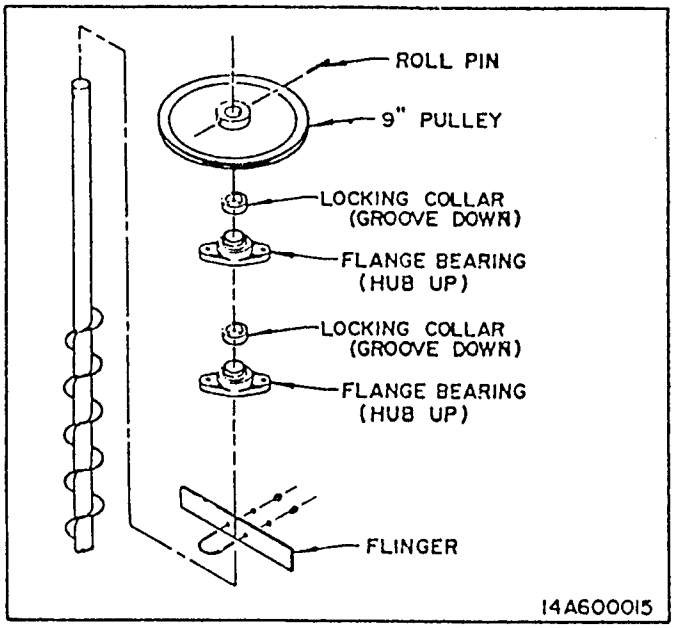


FIG. 15 - DOWN AUGER ASSEMBLY

NOTE: If these items will not slide over shaft, use emery cloth or a file to clean the shaft surface.

3. Attach 9" pulley to top of auger shaft by driving 5/16" rollpin in hole provided.

4. Slide locking collar and top bearing up against pulley. Lock top bearing in place by tapping locking collar lightly in direction of shaft rotation. Tighten set screw.

5. Bolt flinger to auger just above flighting.

INSTALLING DOWN AUGERS

1. Hang down augers by top bearing in slot of carriage. Bolt top bearing to carriage with 2 - 7/16 x 1¼" bolts. Fig. 7

2. Slide bottom bearing down and bolt to carriage with 2 7/16 x 1-1/4" bolts. Fig. 23. Lock collar by tapping lightly in direction of shaft rotation. Repeat steps 1 & 2 for each carriage.

3. ON EACH CARRIAGE:

   a. Check that there is a clearance of approximately 1/4" between the down auger and the crosstube.

   b. There should be approximately 1/8" between crosstube and roller bearings on the bottom carriage plate.

NOTE: Top and bottom carriage plates must be same distance apart on all four corners, or down auger pulley will not line up with motor pulley.

If necessary, loosen vertical straps bolting top and bottom plates of carriages together to obtain proper clearance. Retighten carriage bolts. Make sure straps are tightly bolted.

4. Mount belts to pulleys; align if necessary.

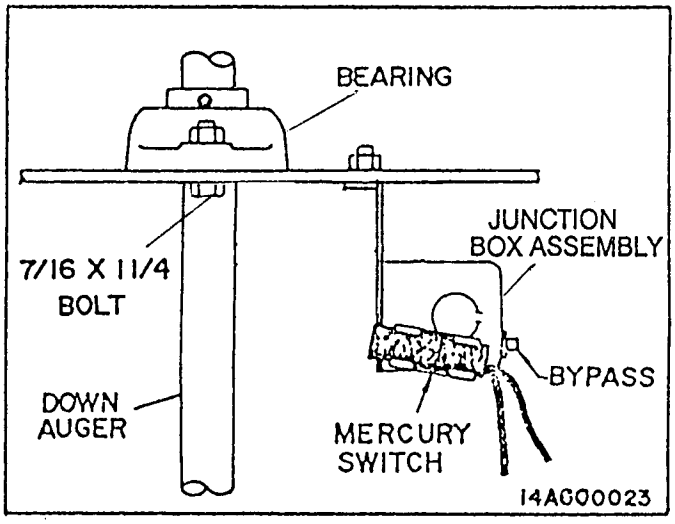


FIG. 16 - DOWN AUGER

COMPLETION

1. Have electrician bring electrical service into the cast junction box in center of bin. Wire into the leads of rotating contact. Fig. 17

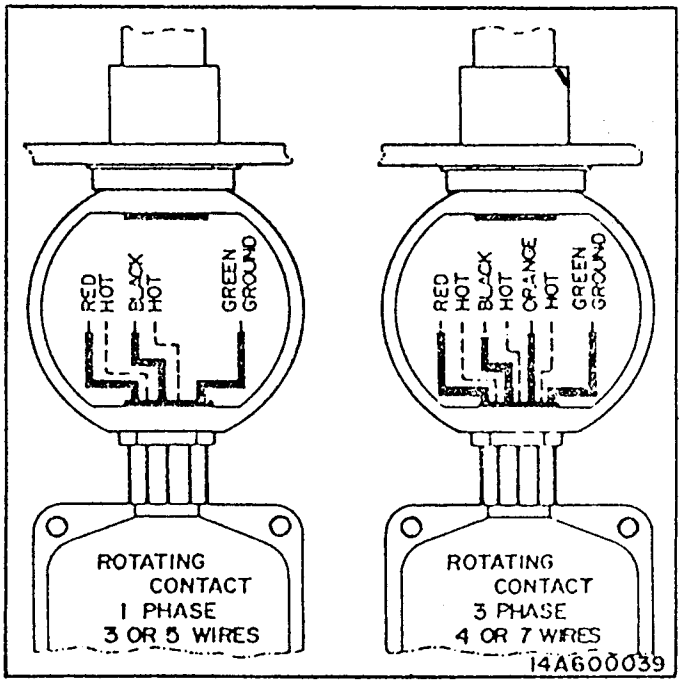


FIG. 17 - WIRING ROTATING CONTACT

2. An electrical disconnect (on-off switch) should be provided at the top of the bin. This is for safety reasons so that machine could not be turned on accidentally during service and also convenience.

3. Be sure to unwire crosstube. Check that entire length of track and bin wall are free of any obstructions which could hinder the movement of crosstube or outside carriage and auger around bin.

OPERATION

⚠ WARNING

NEVER ENTER BIN UNLESS ALL POWER TO EQUIPMENT HAS BEEN DISCONNECTED AND ANOTHER PERSON IS PRESENT!

1. START MACHINE when grain is about 30" or 1 ring deep.

2. NEVER TURN OFF MACHINE while drying grain or when continued filling will take place. In natural air drying or low temperature drying, don't shut machine off until corn is below 22% or it has run at least a week. In situations where a multiple auger machine is used and drying of one bin of grain will take longer than four weeks, the stirring machine should be run for a partial time each day. The amount of time it should be run would be determined by the number of augers and size of bin.

3. DO NOT OVERFILL BIN. Filling must be stopped at the bottom of top ring or 18" below crosstube to prevent belt and motor failure. Filling above this distance voids warranty.

4. REMEMBER, your Sukup Stiring Machine was designed to move dry grain off the bottom and bring it to the top. When your grain first test 16% on the top, the entire bin is NOT necessarily dry. Use probe to determine moisture content of the bin.

5. After grain has dried, shut off heater, COOL GRAIN AND CONTINUE STIRRING. Make sure grain is throughly cooled before shuting off fan, then continue stirring for additional 48 hours. We also recommend periodically running the stirring machine during the winter months if grain is not frozen.

IMPORTANT: When drying grain, center roof opening must be open to prevent rotating contact from shorting out.

RESTARTING YOUR FASTIR

If machine has been idle for more than two days, care should be taken in restarting the stirring machine. Shutting off machine allows the grain to "set up" around the augers during inactivity.

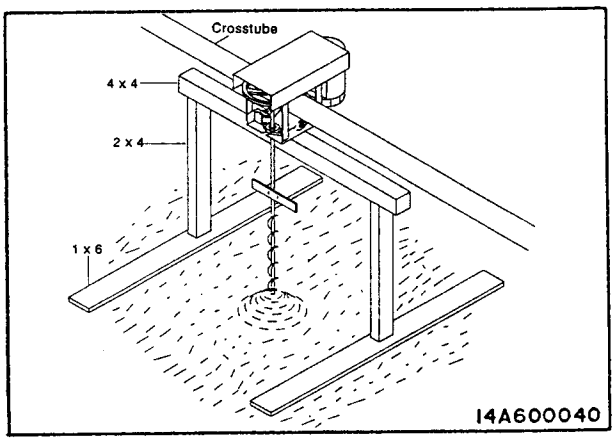


FIG. 18 - RESTARTING AUGERS

RESTARTING AUGERS

1. Support carriage as shown by laying flat board on top of grain. This will prevent distortion of the cross-tube. Fig. 18.

2. Before power is applied, down auger should be loosened by turning clockwise.

3. Unplug all 1-1/2hp motors and start each motor individually beginning with motor nearest center of bin.

4. Remove boards from top of grain.

MAINTENANCE

Check the following items at the beginning of drying season.

1. Check all belts, shields, and electrical connections.

2. Check shear pins and gearmotor.

3. Check that down augers are not bent or worn out and need replacing.

4. Check that locking collars are tight on bearings.

5. Electrical cords are securely taped out of the way of all moving parts.

6. Check that all bolts and nuts are tight.

7. Check that all safety signs are in place and in good condition. See page 5.

DRYING INFORMATION

The Fastir/Stirway II stirring machine solved two big problems in grain drying: overdrying and the slow speed of in-bin drying. The advantages that a stirring machine brings to graindrying can be better understood through a few basic principles:

*Air removes water from the grain
*The more airflow, the faster the drying.
*The warmer the air, the more water can be removed, thus the faster the drying.
*For every 20 degrees F heat rise,relative humidity (RH) is cut by about half.
*The warmer the air, the drier the final grain.

Shown below is a specific example that illustrates these principles.

Outside Air	Heated to	RH	Dries Grain to	Drying Ratio
70°F60%RH	None	60%	13%	1.0
70°F60%RH	90°F	31%	8%	2.6
70°F60%RH	110°F	17%	6%	4.3

As can be seen in the table above, just by increasing outside air temperature by 20 degrees F (to 90 degrees F), the relative humidity is cut by half, and the drying speed is 2.6 times faster than the original rate. However, this increased drying capacity is offset in that the bottom layers of grain would be overdried to 8%. By raising the drying temperature 40 degrees to 110 degrees F, we have increased our drying speed 4.3 times faster than if no heat were added, but the bottom layers would be overdried to 6%. This overdried grain means wasted fuel, lower quality grain, and wasted time. This has been the continual problem of grain drying in silos; as we speed up drying by increasing drying temperature, we overdry the bottom layers of grain. The stirring machine revolutionized in-silo drying by mixing and loosening the grain so higher temperatures may be used to achieve faster drying rates without overdried layers of grain.

ADVANTAGES OF THE SUKUP STIRRING MACHINE

1. Mixing the grain from top to bottom to eliminate overdried layes of grain.

2. Higher temperatures can be used (70 to 120 degrees F), which give much faster drying.

3. Stirring loosens the grain, allowing more airflow, thus increasing drying capacity.

It has, therefore, been our goal to bring the advantages of stirring to both low and high temperature bin drying systems. The Sukup stirring machine brings a low-cost stirring device to those situations that require fast filling yet have plenty of time for stirring and drying the grain. The Sukup stirring machine is an excellent tool in providing greater flexibility to any bin drying or storage systems, either in high or low-temperature systems.

NOTE: Should you desire more stirring capacity, additional down augers may be economically added to your machine at any time. See your Sukup dealer for details.

AIRWAYS

In grain drying a great amount of moisture is being removed from the grain. Because of this, we recommend at least four hatch holes in a 24' diameter bin and that the roof be spaced approximately 3/8" from the top of the side walls to minimize the accumulation of moisture inside the bin. The number of openings should be increased as bin diameter increases.

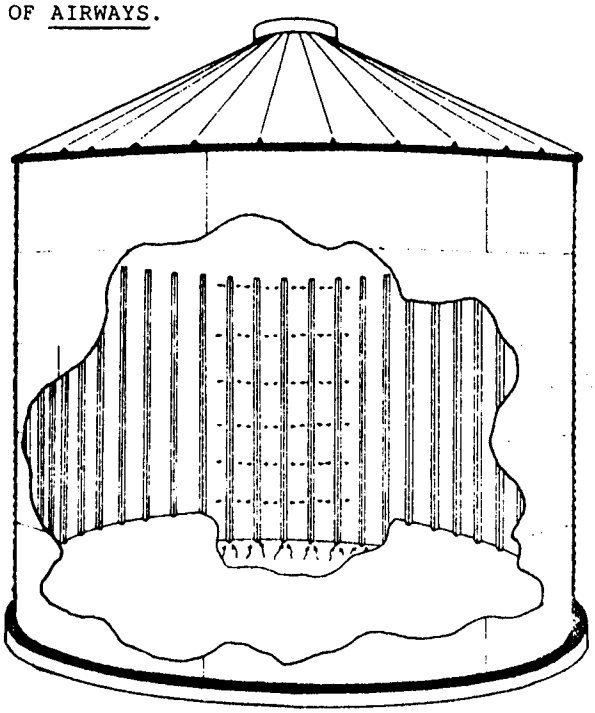
Even with adequate roof openings, problems with wet corn around the bin wall can occur, especially while using high drying temperatures (100° - 140°F) when the outside temperature lowers.

EXAMPLE: When temperatures go below freezing, ice will form on the bin wall. This ice can get up to 1/2" or more thick. When the sun shines on the south sides, the ice will melt, but on the shaded and north sides, it will remain. If you continue filling when this happens, the ice on the shaded sides will be covered over. If you then turn the fan and heater off, thinking the bin is dry, there will still be a layer of ice along the bin wall. When the temperature rises, this ice melts and soaks into the corn, causing caking and spoilage on the wall.

TROUBLE SIGNS TO WATCH FOR:

1. Finding hard spots in bin
2. Opening top hatch and corn smells sour
3. Leakage around middle bin sheets

THESE MAY BE PREVENTED BY THE INSTALLATION OF AIRWAYS.



The Sukup AIRWAYS work like the windshield defrosting system in your car, piping the air from fan and heater to the area where it is needed.

No matter how warm the inside temperature, moisture in the air will cause frost to form on windows in cold weather. This also happens in the bin as the moisture from the grain condenses and freezes on the bin wall, especially when drying extremely wet corn. No stirring auger, no matter how close it gets to the bin wall is able to move this grain once it has frozen to the bin.

AIRWAYS consist of a system of 10' or 12' perforated tubes placed in the floor flashing ever 9" around the bin. Required number of tubes is four times the diameter of the bin. These tubes direct a metered amount of warm air along the bin walls to prevent moisture condensation, thus keeping the grain dry.

TROUBLE SHOOTING GUIDE

> ⚠ CAUTION !
> MAKE SURE ALL POWER IS DISCONNECTED TO THE EQUIPMENT BEFORE BEGINNING ANY SERVICE WORK!

HOW TO CHECK GEARMOTOR:

Set ohmmeter on Rx100 scale to check gearmotor windings for continuity. The reading between lines should be about 60 ohms from black to white and above 80 ohms from red to blue. There should be no reading (infinity) from any of the leads to ground.

HOW TO BENCH TEST GEARMOTOR:

A short pigtail with plug is required. Cord and plug must be for 230v. Connect wires as follows: See Fig. 19 .

1. Connect black and red wires from gearmotor windings to black wire of test pigtail.
2. Connect blue wire from gearmotor windings to one terminal of capacitor.
3. Connect other side of capacitor and white wire from gearmotor to white wire of test pigtail.
4. Plug test pigtail into 230v. source. If gearmotor does not run, see gearmotor section of trouble shooting.
5. To reverse direction, disconnect pigtail from power source. Interchange red and blue wires from gearmotor windings.

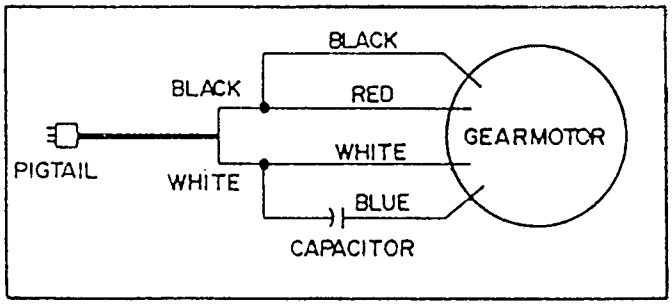


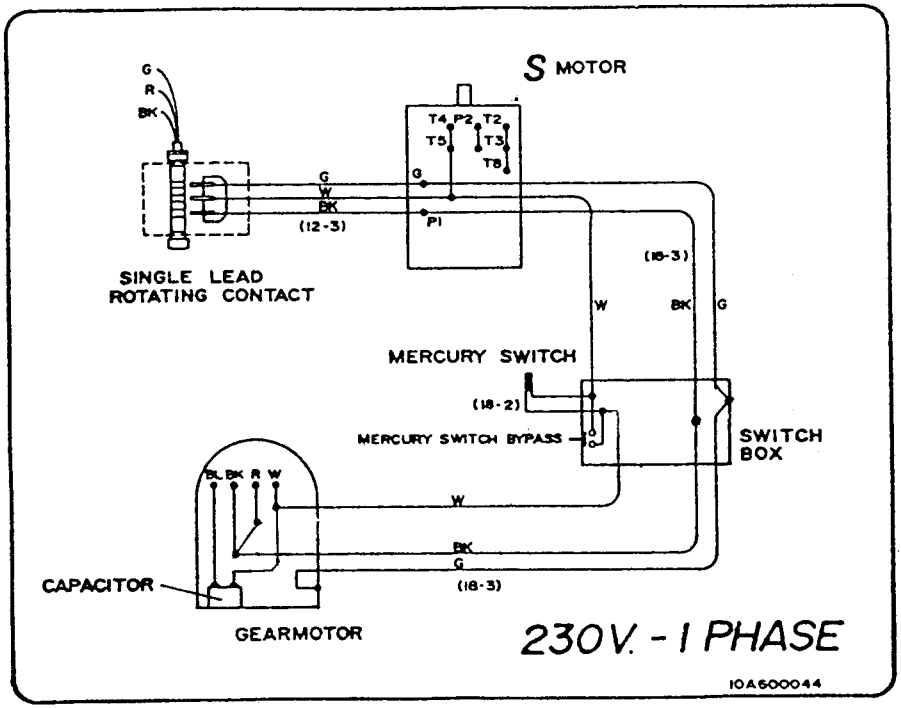
FIG. 19 - GEARMOTOR BENCH TEST

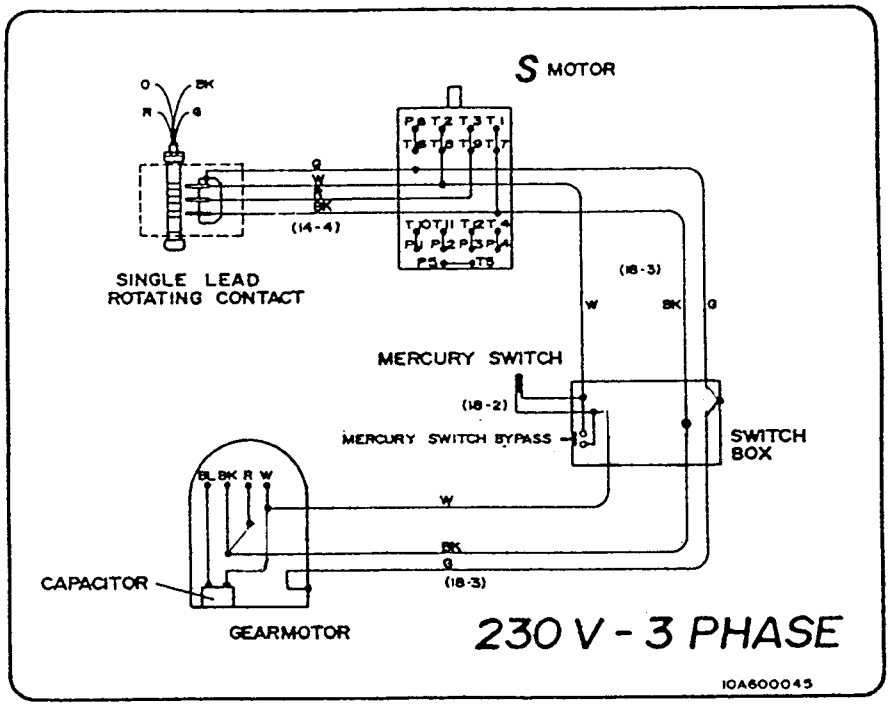
HOW TO CHECK A CAPACITOR:

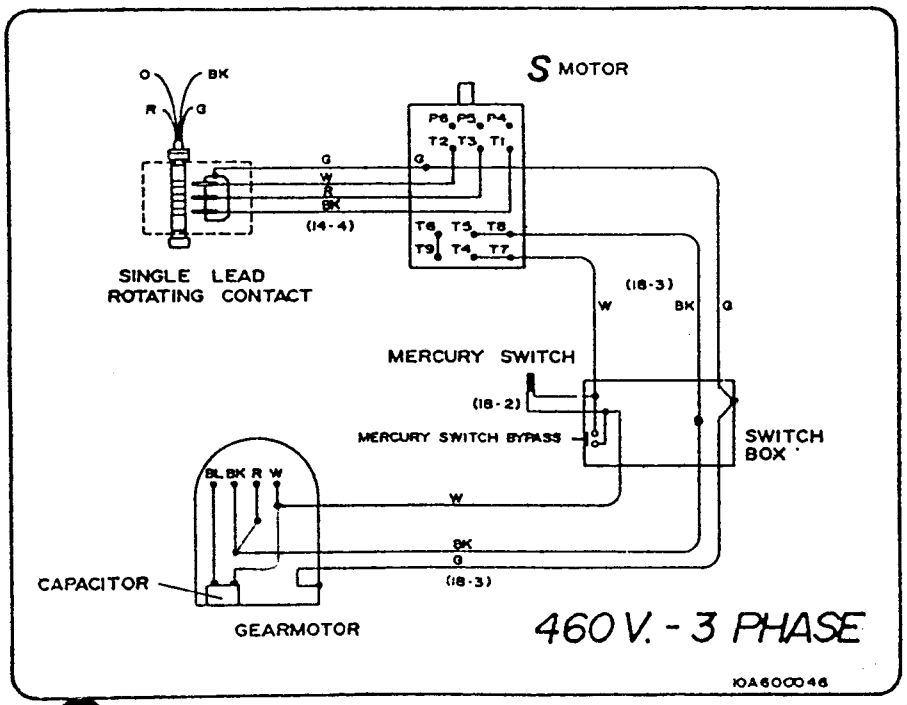
Set ohmmeter on Rx100 scale. Place leads on terminals of capacitor. This initial connection will slightly charge capacitor. Next, interchange meter leads, the ohmmeter should go to approximately half scale and then slowly drop back to infinity. Interchange leads again - the same should occur. A constant reading of 0 or infinity indicates a bad capacitor.

TROUBLE SHOOTING GUIDE

PROBLEM	REASON	SOLUTION
1. Gearmotor not turning.	No electricity.	Check plug-in with volt meter for proper voltage.
	Automatic thermal overload shut off. 230V to 115V gearmotor or 115V to 230V gearmotor.	Check plug-in for proper voltage. Also, check for binding or obstruction on track or tube.
	Weak thermal overload in field of gearmotor.	Replace field in gearmotor.
	Gears may be out of gearmotor.	Feel if gearmotor is running. If so, gears must be replaced.
	Capacitor bad.	Replace capacitor.
	Mercury switch(es) on augers shutting off gearmotor on center hanger.	Push button bypass on junction box. If gearmotor turns, mercury switch is improperly adjusted or faulty.
2. 1½hp motor not turning.	Thermal overload shut off.	Press re-set button. May be running on 115V. Must be on 230V except on 460V units.
3. 1½hp motor running slow, lacking power.	Wired 115V or one fuse blown.	Must be 230V. Use tester.
4. Crosstube not turning.	Shearpin sheared.	Replace pin.
5. Crosstube not moving forward on track.	Shearpin sheared on gearmotor.	Replace shearpin.
6. Vibration	Bent down auger.	Straighten or install new down auger.
	Large pulley split or bent.	Replace pulley.
7. Broken belt.	Belt not properly aligned.	Adjust motor pulley.
	Damaged pulley	Check that top and bottom carriage plates are same distance apart on all 4 corners (see page 13).
		Adjust motor pulley.
8. Down auger trailing excessively.	Flighting worn off of down auger.	Replace auger.
9. Machine hitting top of bin.	Track installed too high.	Lower track.
10. Down auger getting ahead.	Crosstube not traveling around bin.	Check drive assembly.
	Hard spot or concentration of fines in center of bin.	Remove some grain from center of bin (truck or wagon load).
11. Cannot get drying air hot enough.	LP gas vaporizes too slowly.	Provide vaporizer on burner.
12. Rotating contact shorting out.	Too much moisture in center of bin.	Open center roof opening so moisture can escape.
13. Carriage not traveling in or out of crosstube.	Mechanical reversing bearing didn't switch completely.	Adjust springs or reversing rod.







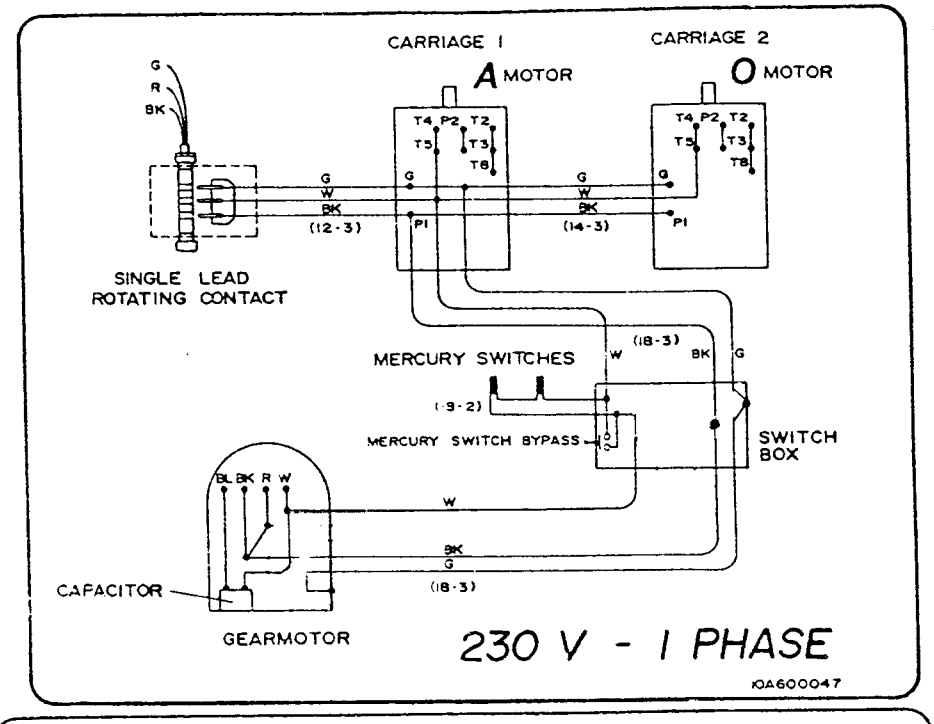
SINGLE AUGER MACHINE
1 1/2 HP MOTOR
STIR-UP
W/230 V. GEARMOTOR

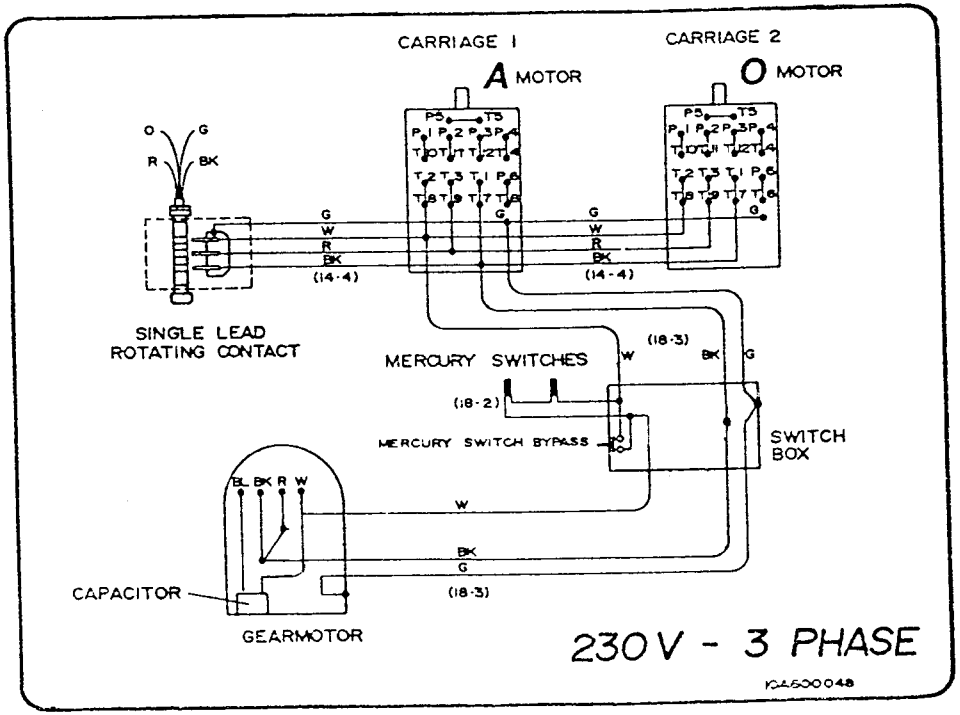
WIRE COLOR CODE:
- W - WHITE
- BK - BLACK
- G - GREEN - GROUND
- R - RED
- BL - BLUE

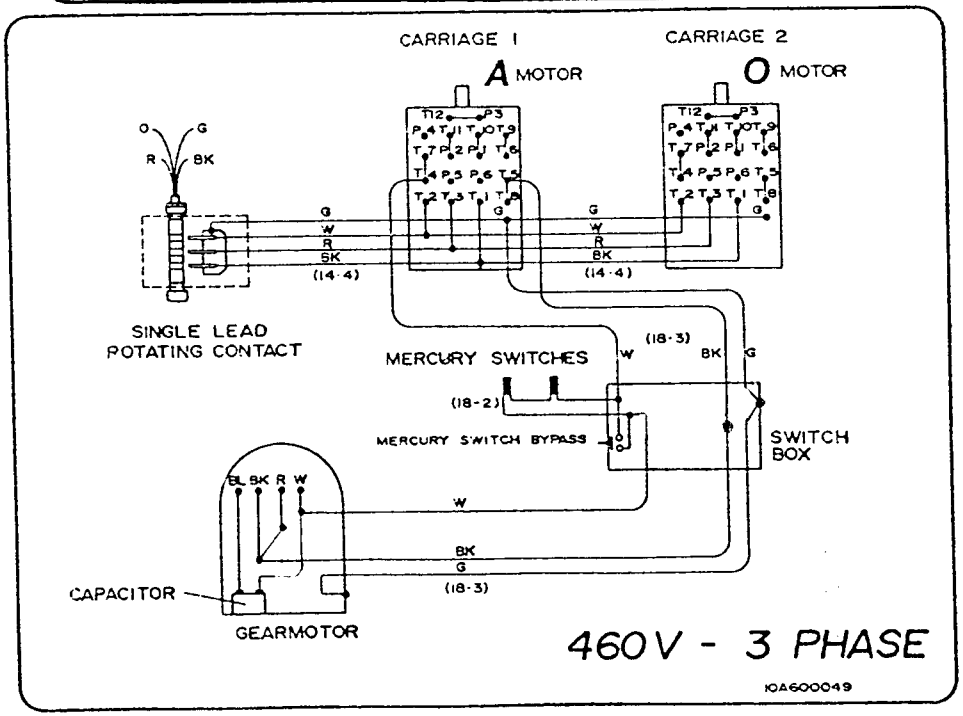
● - WIRE CONNECTION

(18-3) - INDICATES CORD SIZE

THESE DIAGRAMS USE LESSON MOTORS



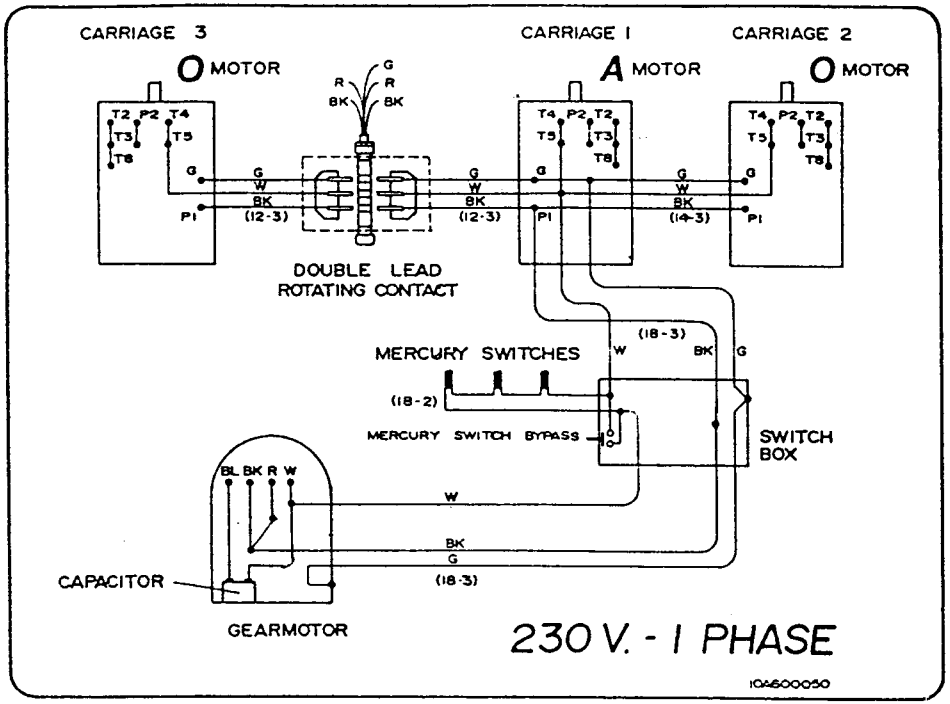


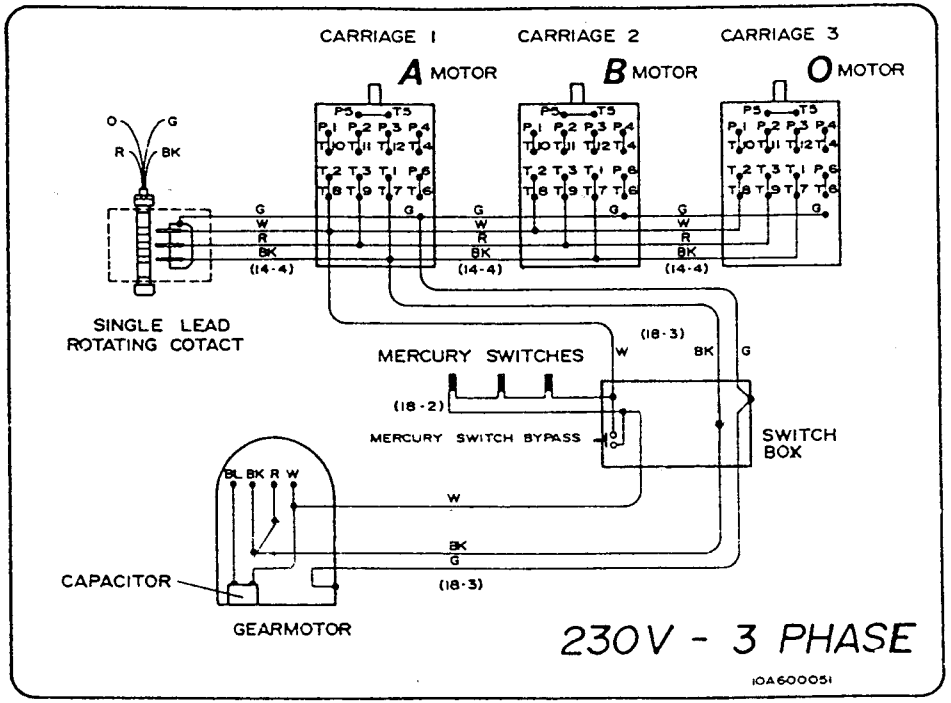


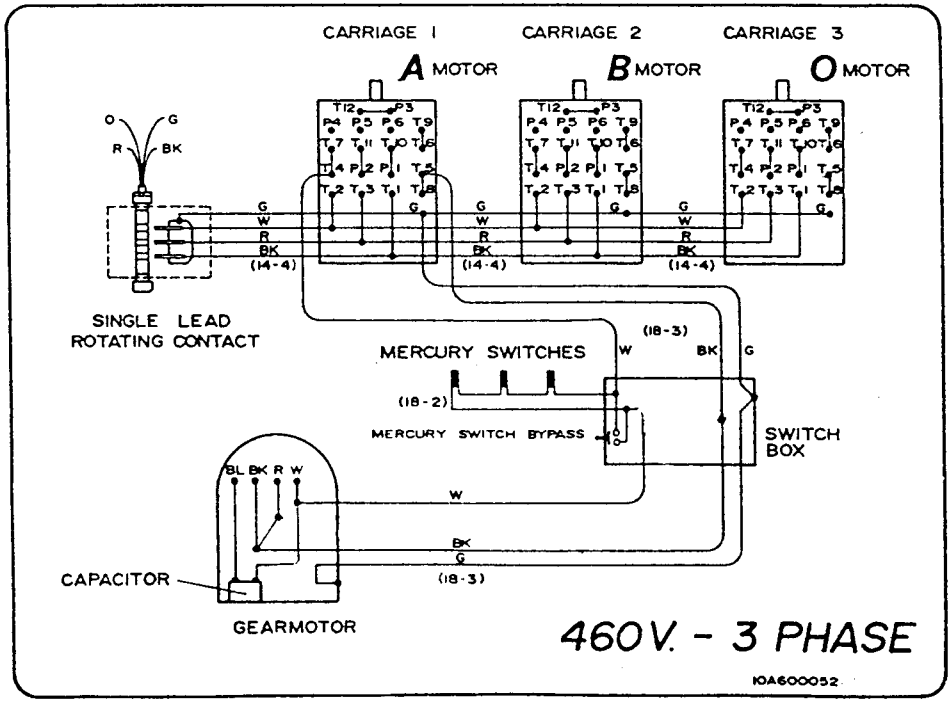
DOUBLE AUGER MACHINE
1 1/2 HP MOTORS
STIR-UP
W/230 V. GEARMOTOR

WIRE COLOR CODE: W - WHITE
BK - BLACK
G - GREEN - GROUND
R - RED
BL - BLUE

● - WIRE CONNECTION
(18-3) - INDICATES CORD SIZE
THESE DIAGRAMS USE LESSON MOTORS





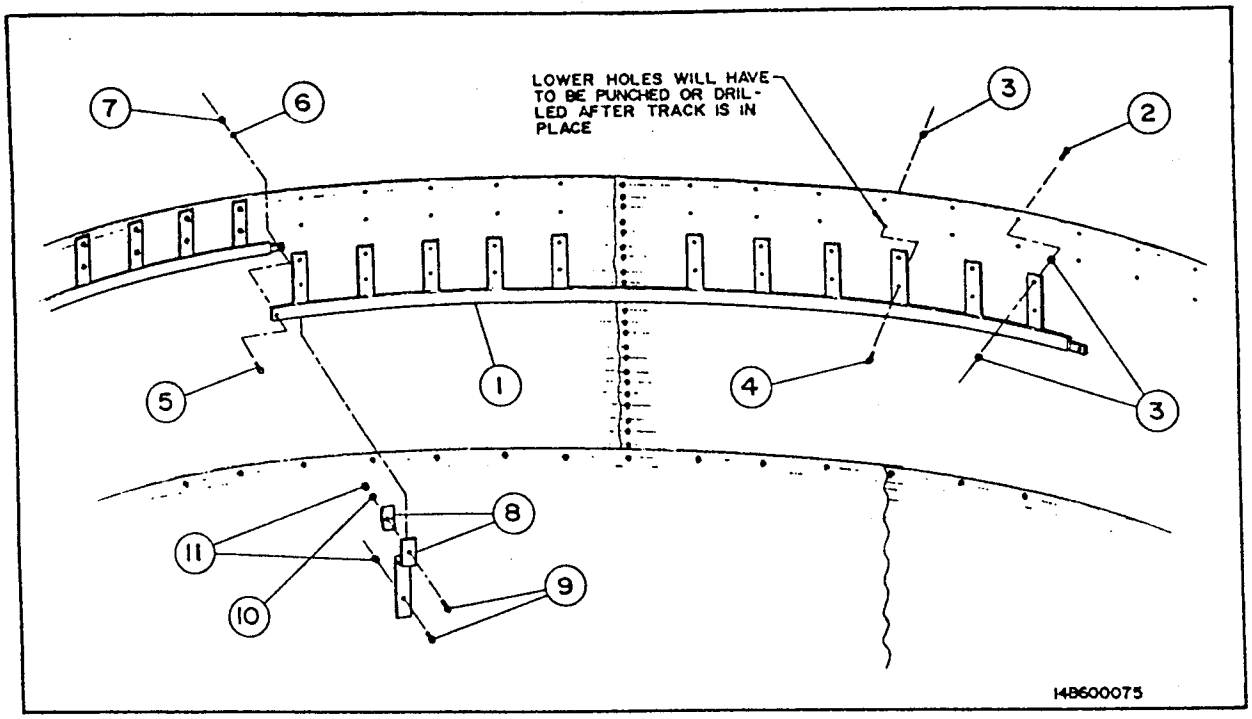


TRIPLE AUGER MACHINE
1 1/2 HP MOTOR - 1725 RPM
STIR-UP & STIRWAY II
W/230V. GEARMOTOR

WIRE COLOR CODE:
W - WHITE
BK - BLACK
G - GREEN - GROUND
R RED
BL - BLUE

● - WIRE CONNECTION
(18-3) - INDICATES CORD SIZE
THESE DIAGRAMS USE LESSON MOTORS

TRACK



Ref. No.	Description	Lgth.	Reqd.	Part# Bndl.	Part# Ea.pc.
1	15'-18' sgl brk.	(109 5/8)	1	A5700	A5719
	18'7" " "	(114 3/4)		A5701	A5728
	21' " "	(110)		A5702	A5720
	21'8"-22'* " "	(114 3/4)		A5703	A5728
	23'6"-24' " "	(110 3/8)		A5704	A5721
	24'8" " "	(114 3/4)		A5705	A5728
	26'6"-27' " "	(110 3/4)		A5706	A5722
	27'10"-28'*" "	(114 3/4)		A5707	A5728
	29'4"-30 dbl brk.	(110 7/8)		A5708	A5723
	31' " "	(114 3/4)		A5709	A5729
	33' " "	(111)		A5710	A5724
	34' " "	(114 3/4)		A5711	A5729
	36' " "	(111 1/2)		A5712	A5725
	37'1" " "	(114 3/4)		A5713	A5729
	40'2"-42' " "	(111 1/2)		A5714	A5726
	48' " "	(111 11/16)		A5715	A5727

*Must include short track section (A5718)

The following parts required for hanging track.

Ref. No.	Description	Req/Section SB*	DB**	Part # Bndl.
2	Bolt 5/16-18x1-1/4 Gr5..	7	11	J0555
3	Nut 5/16.....	21	33	J1000
4	Bolt 5/16-18x1.....	7	11	J0530
	For track splice:			
5	Bolt 3/8-16x1.....	1		J0610
6	Lockwasher, 3/8.....	1		J1205
7	Nut 3/8-16.....	1		J1015

*Single bracketed **Double Bracketed

Optional:

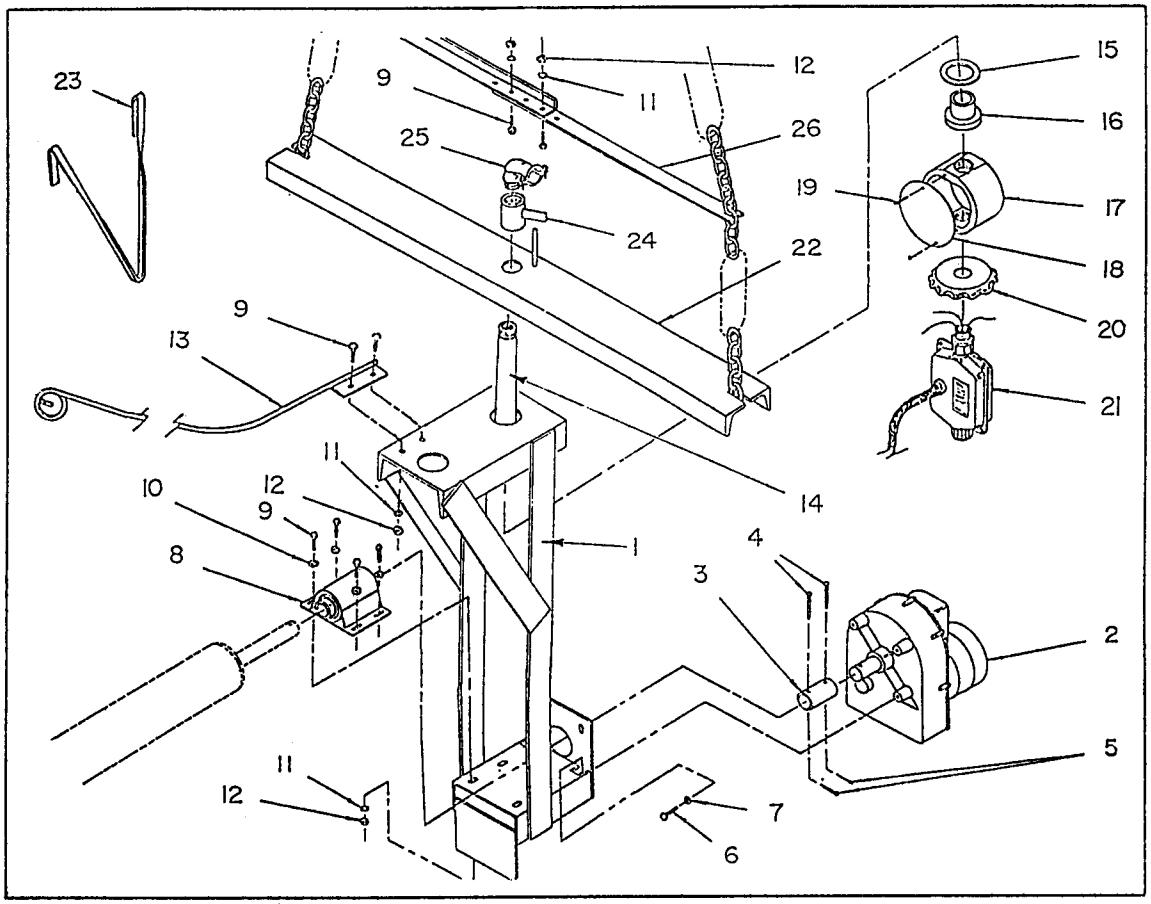
The following support is optional. One used at each track splice for additional support. Bracket A5717 includes hardware listed.

Ref No.	Description	Req/Section	Part#
8	Track support bracket.....	1	A5717
9	Bolt 5/16-18x1-1/4 bin blt Gr5	2	J0555
10	Lockwashers,5/16.....	1	J1200
11	Nut 5/16-18.....	2	J1002

The short track section is needed on some bins to complete track ring. Listed with short section is hardware needed to hang one piece.

	Short track section, 18-1/2"...	1	A5718
	Bolt 5/16-18x1-1/4" bin blt Gr5	2	J0555
	Nut 5/16-18.....	4	J1000
	Bolt 5/16-18x1.....	2	J0530
	Bolt 3/8-16x1 Gr5.....	1	J0610
	Lockwasher, 3/8.....	1	J1205
	Nut 3/8-16.....	1	J1015

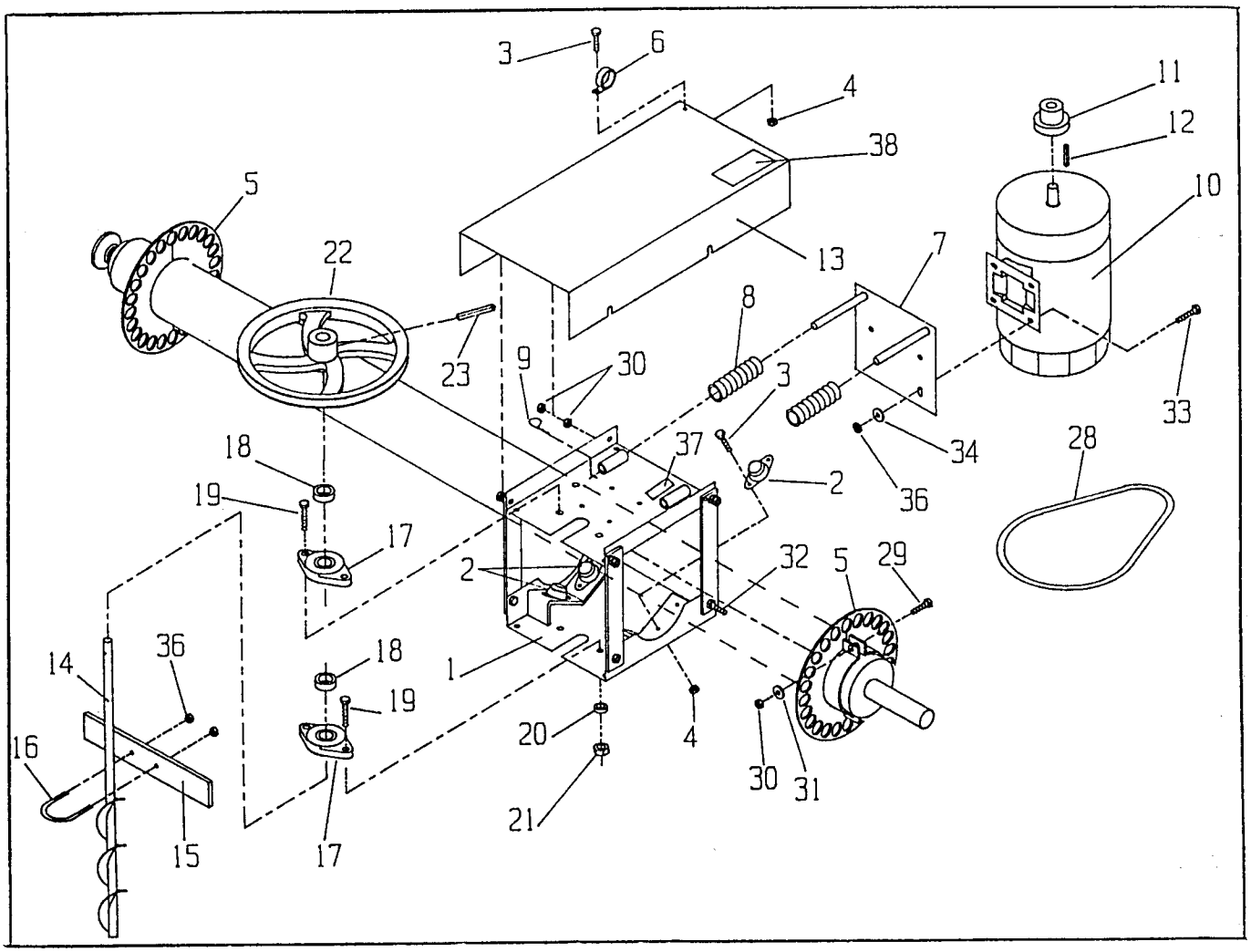
CENTER HANGER



Ref. No.	Description	Req'd.	Part No.
1	Off set center hgr (Fastir)	1	A7504
2	H.D. gearmotor 230v	1	A5319
3	Tube coupler, 1" ID	1	A5318
4	Picker pin, 3/16 x 1-1/2"	2	J1536
5	Cotter pin, 1/16 x 3/4"	2	J1419
6	Bolt, 5/16-18 x 3/4"GR5	4	J0520
7	Lockwasher, 5/16	4	J1200
8	Pillow block w/1" brgs	1	A5649
	" " w/1-1/4" brgs		A5651
	Center brg for pillow block 1"		J0030
	" " " " " 1-1/4"		J0039
9	Bolt, 3/8-16 x 1" GR5	8	J0606
10	Flat washer, 3/8"	4	J1117
11	Lockwasher, 3/8"	8	J1205
12	Nut, 3/8-16	8	J1020
13	Cord hanger	1	A5609
	Cord hanger extra long		A5598
14	Hanger pipe 8" x 1"	1	A5603
	" " 24" x 1"		A5604
	" " 32" x 1"		A5605
	" " 48" x 1"		A5607
	" " 78" x 1"		A5608
	" " 62" x 1"		A5606

Ref. No.	Description	Req'd.	Part No.
15	Brass washer	1	A5601
16	Cast bushing	1	A5602
17	Cast elec. junction box	1	A5612
18	Junction box cover	1	A5658
19	Screw, #8-32 x 3/4" 2TEK	2	J0465
20	Drip plate	1	A5611
21	Rotating contact	1	
	(see separate breakdown for size)		
22	Channel hgr reg w/5' chain	1	A4801
	" " " HD w/6' chain		A4803
23	V-hanger	2	A4804
	Adapter hgr brkts (optional)	4	G0125
24	Coupling w/tab	1	A5610
25	Electrical elbow	1	J4135
26	Chain spreader bar kit (opt.)	1	A5635
	kit includes hdwe & instruction		

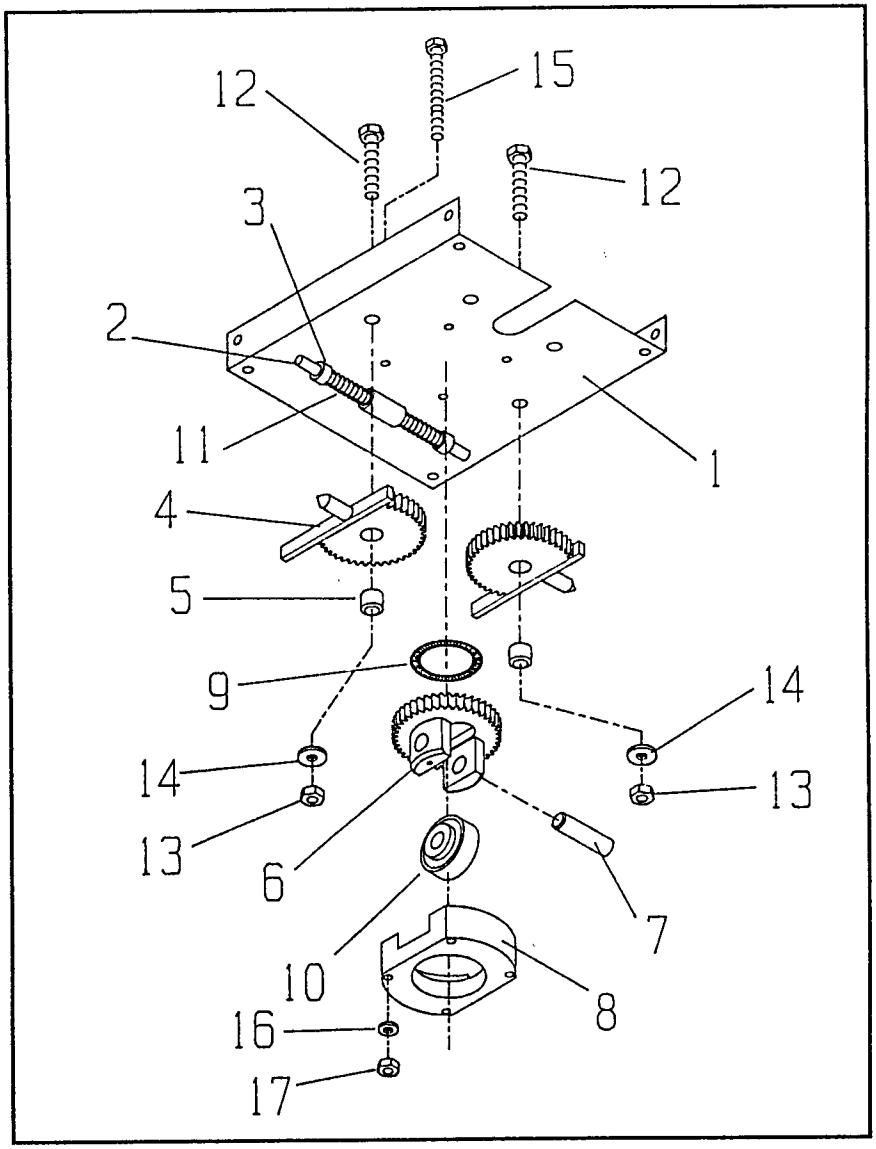
PRIMARY CARRIAGE



Ref. No.	Description	Req'd	Part No.
1	Center Carriage	1	A8041
2	Ball bearing 1" Rexord	4	J0142
3	Machine screw #10-24 x1/2"	9	J0514
4	Nut, #10-24 plated	9	J0985
5	Reversing carriage plate 4-1/2"	2	A8034
6	Cord holder	1	A5637
7	Motor mount	1	A5209
8	Spring comp.1-1/2" CLx1/2 ID	2	J2365
9	Hairpin clip	1	J5410
10	Motor "S" 1-1/2hp 1ph 230v	1	A7720
	Motor "A" 1-1/2hp 1ph 230v		A7721
	Motor "S" 1-1/2hp 3ph 230v		A7730
	Motor "A" 1-1/2hp 3ph 230v		A7732
	Motor "S" 1-1/2hp 3ph 460v		A7734
	Motor "A" 1-1/2hp 3ph 460v		A7735
	(motor include pulley and key)		
	(motors are wired w/replacement leads)		
11	Pulley, 2-3/4 x 7/8 "A"	1	J0295
12	Key stock 3/16 sq x 3/4"	1	A7522
13	Center carriage shield	1	A8056
14	Down auger 15'6"(std)other sizes opt	1	A4210
15	Flinger	1	A5616

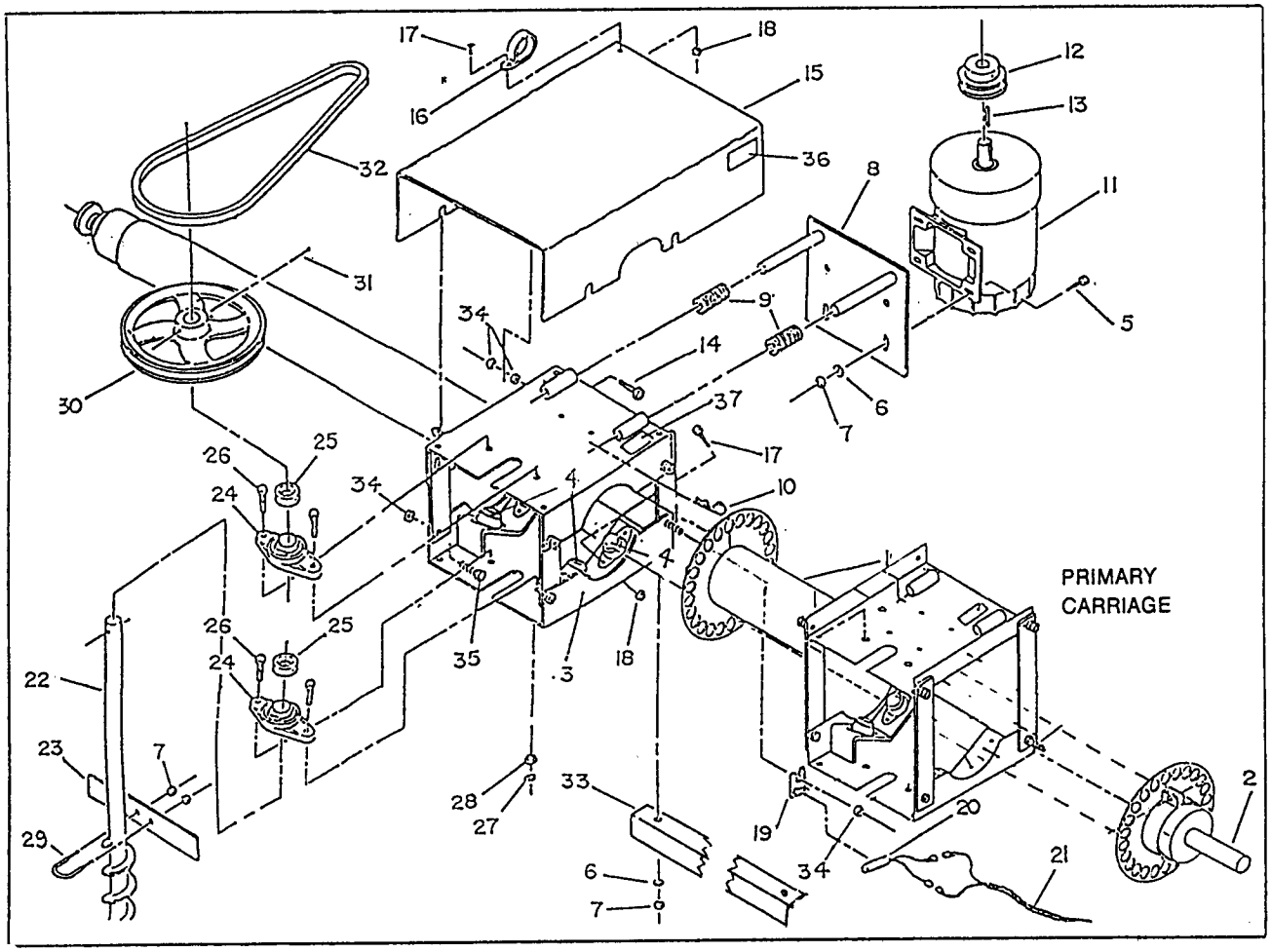
Ref. No.	Description	Req'd	Part No.
16	U-bolt, 5/16-18 x 1-3/4"	1	J0810
17	Flange brg 1" FHFT 205-16	2	J0003
18	Locking collar	2	J0067
19	Bolt, 7/17-14 x 1-1/4"	4	J0700
20	Lockwasher, 7/16	4	J1210
21	Nut, 7/16-14	4	J1035
22	Pulley, 9" "A" groove w/pin hole	1	J0355
23	Rollpin 5/16 x 2-1/4"	1	J1510
28	Belt, AX42 4-1/2"	1	J0197
29	Bolt 3/8-16 x 1-1/4"	9	J0616
30	Nut, 3/8-16	13	J1020
31	Lockwasher, 3/8 split	5	J1205
32	Bolt, 3/8-16 x 1"	5	J0606
33	Bolt, 5/16-18 x 1"	4	J0527
34	Flatwasher, 5/16"	8	J1111
35	Lockwasher, 5/16"	4	J1200
36	Nut, 18-5/16	6	J1002
37	Decal, Warning	1	L0284
38	Decal, Replace shield	1	L0271

MECHANICAL REVERSING ASSEMBLY



Ref #	Description	Req'd	Part #
1	Plate Reversing Carriage	1	A8050
2	Reversing Rod 8-1/4" long	1	A8059
3	Shaft Collar 30D x 7/16"	2	A8039
4	Toggle Gear	2	A8045
5	Bushing 1/2x3/4x3/4	2	A8058
6	Directional Gear	1	A8043
7	Pin 2-3/8" long	1	A8044
8	Housing	1	A8042
9	Thrust Bearing	1	J0058
10	Drive Bearing 5/8"B	1	J0057
11	Compression Spring	2	J2348
12	Bolt 1/2-13 x 1-1/2"GR5	2	J0730
13	Lock Nut 1/2"-13	2	J1042
14	Flatwasher 1/2"	2	J1125
15	Bolt 1/4-20 x 2"GR5	4	J05134
16	Lockwasher 1/4 split	4	J1195
17	Nut 1/4-20	4	J0990

SATELLITE CARRIAGE

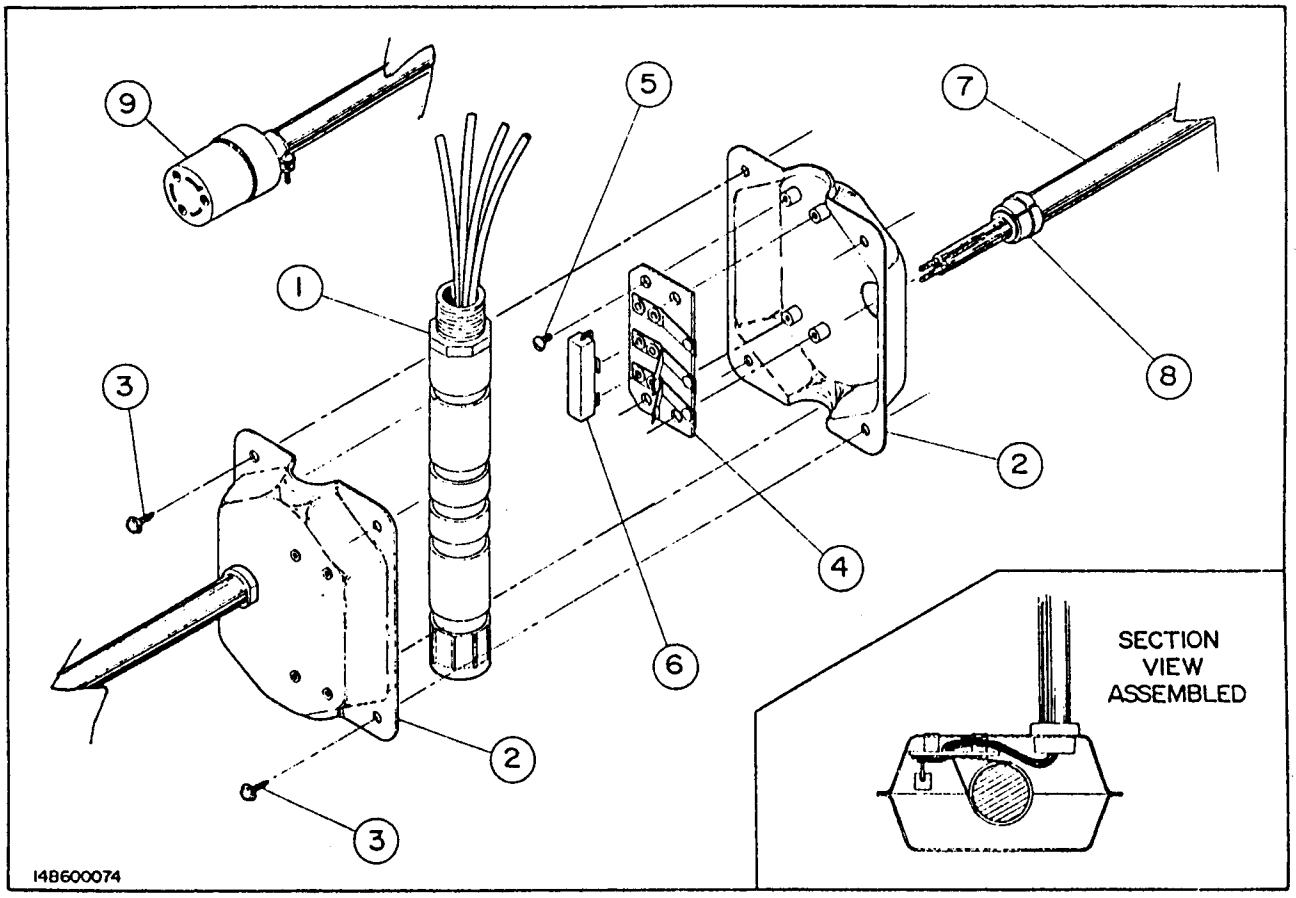


Ref No.	Description	Req'd	Part No.
1	Crosstube, Fastir, 18'-18'7"	1	A8126
	Crosstube, Fastir, 21'-21'8"	1	A8128
	Crosstube, Fastir, 24'-24'9"	1	A8130
	Crosstube, Fastir, 27'-27'10"	1	A8132
	Crosstube, Fastir, 30'-31'	1	A8134
2	Inner slug 4-1/2 - 1-1/2" shaft	1	A4807
3	Outer Carriage	opt.	A8040
4	Ball bearing 1" Rexord	8	J0142
5	Bolt, 5/16 -18 x 1"	6	J0527
6	Lockwasher 5/16 split	6	J1200
7	Nut 5/16 - 18	8	J1002
8	Motor Mount	1	A5209
9	Spring Comp. 1-1/2" CL x 1/2 ID	2	J2365
10	Hairpin clip	1	J5410
11	Motor "O" 1-1/2hp 1ph 230v	1	A7725
	Motor "B" 1-1/2hp 1ph 230v		A7728
	Motor "O" 1-1/2hp 3ph 230v		A7729
	Motor "B" 1-1/2hp 3ph 230v		A7731
	Motor "O" 1-1/2hp 3ph 460v		A7733
	Motor "B" 1-1/2hp 3ph 460v		A7736
12	Pulley, 2-3/4 x 7/8 "A"	1	J0295
	Pulley,3.2x7/8 sng.grv"A"(outsd auger)	1	J0319
13	Key, 3/16 x 3/16 x 3/4	1	A7522
14	Bolt, 3/8 - 16 x 1-1/4"	4	J0616
15	Outer Carriage Shield	1	A8055

Ref No.	Description	Req'd	Part No.
16	Plastic Cord Holder	1	A5637
17	Machine Screw #10-24 x 1/2"	17	J0514
18	Nut, #10-24	17	J0985
19	Mercury switch bracket	1	A5446
20	Mercury switch 7MPL-46	1	A5445
21	Mercury sw,brckt & cord,(9'6")	1	A5424
22	Down auger 15'6" (std.)		A4210
	(other sizes optional)	1	
23	Flinger	1	A5616
24	Flange brg 1" FHFT 205-16	2	J0003
25	Locking collar	2	J0067
26	Bolt, 7/16 - 14 x 1-1/4" Gr5	4	J0700
27	Nut, 7/16 -14	4	J1035
28	Lockwasher 7/16	4	J1210
29	U-bolt, 5/16-18 x 1-3/4"	1	J0810
30	Pulley 9" "A" gr w/pin hole	1	J0355
31	Rollpin 5/16 x 2-1/4"	1	J1510
32	Belt, AX42 4-1/2 cr. tube	1	J0197
	Belt, AX43 *	1	J0205
33	Tie Bar (specify size needed)	opt	A81__
34	Nut, 3/8"-16	9	J1020
35	Bolt, 3/8 -16 x 1"	5	J0606
36	Decal, Warning	1	L0284
37	Decal, Replace shield	1	L0271

*** optional on outside auger**

ROTATING CONTACT (PATENTED)



Ref No.	Description	Req'd	Part No.
1	Rot. cont.cntr, 3wire 1ph....	1	A5558
	" " " 4 " 3ph....		A5559
	" " " 5 " 1ph....		A5585
	" " " 7 " 3ph....		A5560
2	Can, sgl ld-hole one side....	1	A5549
	" dual ld-hole both sides...		A5550
3	#8-18x1/2 #2 TEK screw.....	4	J0460
4	Cont. bd 1ph w/htr 3 term....	1*+	A5563
	" " w/o htr 3 terminals		A5578
	" " 3ph w/htr 3 terminals		A5561
	" " 3ph w/o htr 3 terminals		A5580
	" " 460 3ph w/htr,3 term.		A5582
5	#6-32x1/4 pan head mach screw	4*	J0455
6	Contact board heater,230v....	1	J5530
	" " " ,460v,40k		J5532
7	Cord 12-3,state lgth req.....	1*	K6331
	Cord 14-4 " " "		K6401
8	8P-2 Heyco bushing.....	1*	J5000
9	3 prong female plug 2494.....	1*	J3720
	4 prong female plug 2456,460v wired direct		J3730

*Number required for sgl lead. Double required for dual lead.

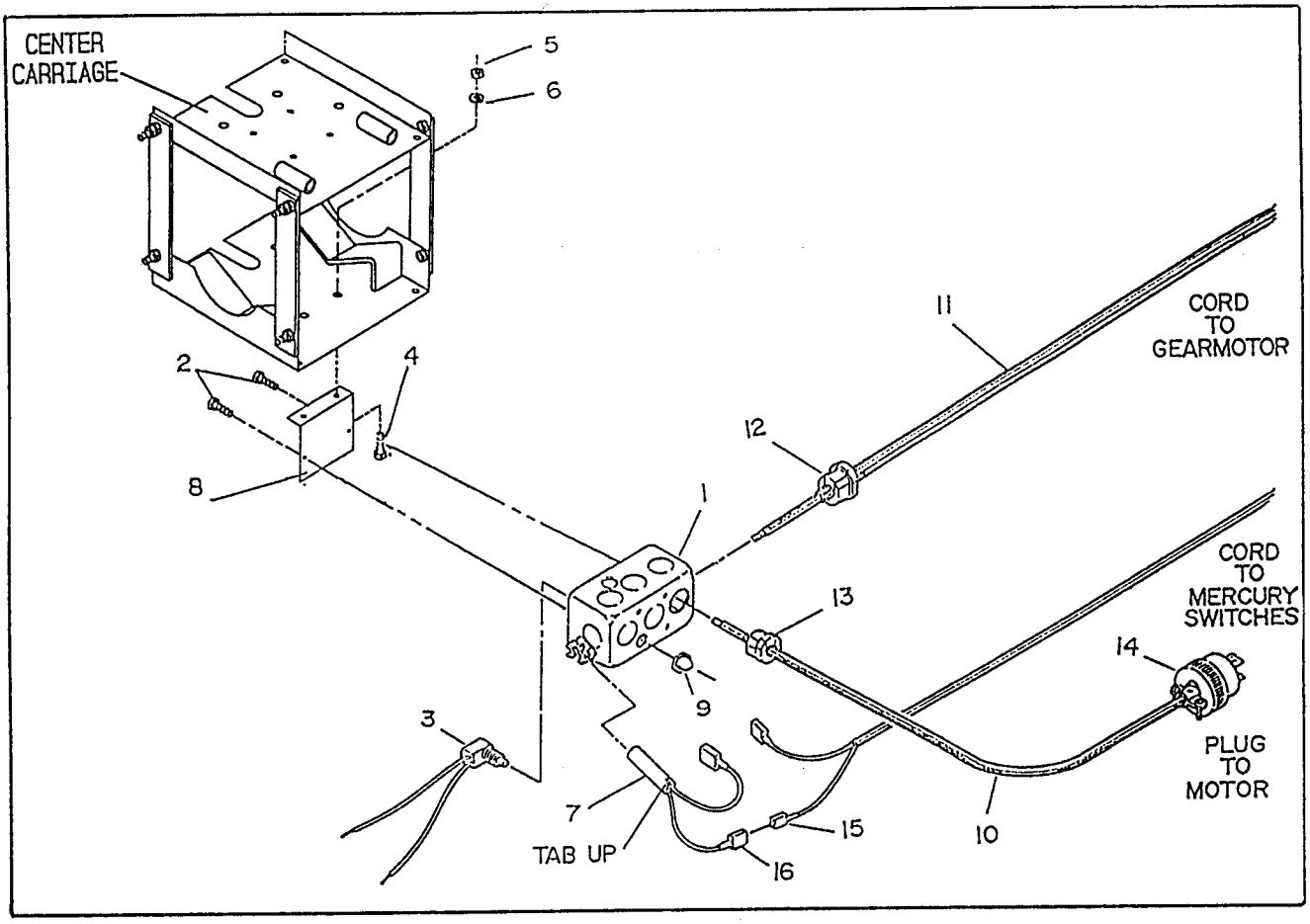
+Single lead contacts require 1 board w/htr. Dual lead contacts require 1 board w/heater, 1 without.

The following are complete rotating contacts w/cords. Listed are replacement cord lengths. State length required if different.

Part #	Volts	# Leads	Ph	Spool Wire	Cord Length
A5504	230	Single	1	3	17'10"
A5532	230	Single	3	4	17'10"
A5539	230	Single	3	4	19'2"
A5475	230	Dual	1	5	12'10"-10'10"
A5476	230	Dual	1	5	15'10"-10'10"
A5477	230	Dual	1	5	17'10"-10'10"
A5478	230	Dual	1	5	24'10"-10'10"
A5480	230	Dual	3	7	12'10"-10'10"
A5481	230	Dual	3	7	15'10"-10'10"
A5482	230	Dual	3	7	17'10"-10'10"
A5483	230	Dual	3	7	24'10"-10'10"
The following are rotating contacts w/o cord.					
A5551	230	Single	1	3	N/A
A5553	230	Single	3	4	N/A
A5554	460	Single	3	4	N/A
A5555	230	Dual	1	5	N/A
A5556	460	Dual	3	7	N/A
A5557	230	Dual	3	7	N/A

Notes: Can should be sealed w/tub & tile caulk. Spool should spin freely after assembly. If spool binds, find and correct problem before installing on stirring machine.

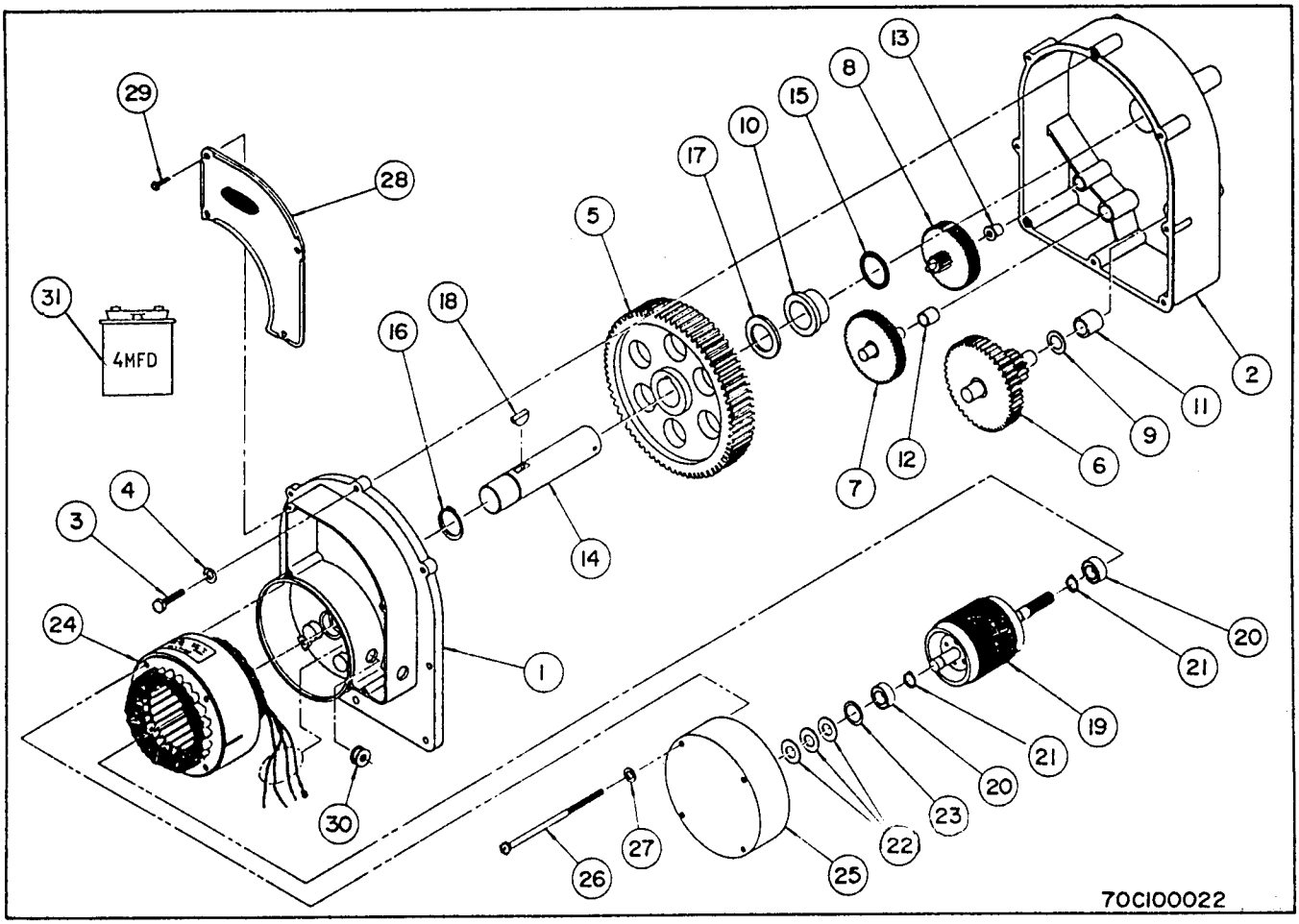
ELECTRICAL JUNCTION BOX ASSEMBLY



Ref. No.	Description	Req"d	Part No.
	Jnctn sw box, w/14'10"CD&MT PLT		A8140
	Jnctn sw box, w/16'10"CD&MT PLT		A8141
	Jnctn sw box, w/18'6" CD&MT PLT		A8142
	Jnctn sw box, w/21'10"CD&MT PLT		A8143
1	Electric Box	1	A5417
2	Screw # 6-32 x 1/4"	2	J0455
3	Push button (normal open)	1	J4485
4	Bolt 5/16-18 x 1"	2	J0527
5	Nut 5/16"-18	2	J1002
6	Lockwasher 5/16"	2	J1200
7	Mercury switch w/connector	1-5	A5445
8	Mounting plate elec. box	1	A8081
9	Switch cover, push button	1	J4500
10	Power cord only (18-3) 16"	1	A5350
11	* Gearmotor cord only 18-3	1	K6551
12	Heyco bushing 7-W-2	1	J5005
13	" " 7-K-2	1	J5040
14	Plug 2373 3 prong male	1	J3712
15	4 x 293 female spade		J3825
16	4 x 292 male spade		J3820

* When ording this part, machine size, number of down auger, and/or cord lengths must be specified to match proper parts.

GEAR MOTOR



Ref No.	Description	Req'd	Part No.
	Complete grmtr 230v	1	A5319
1	Top case w/integral junction box	1	A5301
2	Bottom case	1	A5302
3	Bolt, 1/4-20 x 3/4	8	J0505
4	Lockwasher, 1/4	8	J1195
5	#1 gear(6"metal,72teeth)	1	A5321
6	#2 gear(fiber 65 teeth)	1	A5304
7	#3 gear(fiber 61 teeth)	1	A5305
8	#4 gear(fiber 72 teeth)	1	A5306
	Complete gear set	4	A5303
9	Spacer washer .875D x .505 ID x .010	1	J1150
10	Bushing for #1 gear	2	J3500
11	" " #2 "	2	J3505
12	" " #3 "	2	J3510
13	" " #4 "	2	J3515
	Complete bushing set	8	A5307
14	Output shaft, 1"	1	A5308

Ref No.	Description	Req'd	Part No.
15	O-ring seal, 1"	1	J3540
16	Snap ring, 1"	1	J3585
17	Machine bushing, 1"	1	J1265
18	Woodruff key(#91half moon)	1	J3600
19	Armature & shaft, 230v	1	A5310
20	Shaft brgs,3/8x.875 99R6	2	J0015
21	Snap ring, 3/8	2	J3580
22	Spacer washer (.875 D x .375ID x .010)	3	J1145
23	Wafer spring WO-855 .010	1	J1160
24	Motor field, 230v	1	J3625
25	Field cover (end bell)	1	A5325
26	Cover bolt #10-32x4-1/2"	4	J0500
27	Star washer #10	4	J1191
28	Junction box lid	1	A5311
29	Screws self-tapping #8, 18 x 1/2 TEK	4	J0460
30	#2335 Rubber grommet	1	J4971
31	Capacitor (4MFD Metal)	1	J4952

SHIPPING LISTS

	Single	Double	Triple
Fastir Crosstube w/hanger pipe & top hanger & tie bar(s) if needed	1	1	1
Track	1	1	1
Down Auger	1	2	3
Hardware Ctn w/motors	1	1	1

FASTIR HARDWARE CARTON
(4-1/2" OD Crosstube)

DESCRIPTION	PART #	SINGLE	DOUBLE	TRIPLE	TSK
Fastir Offset C/Hanger	A7504	1	1	1	-
Fastir Outside Shield	A8055	0	1	2	1
Fastir Center Shield	A8056	1	1	1	-
Flinger	A5616	1	2	3	1
V-Hangers	A4804	2	2	2	-
Adapter Brackets	G0212	4	4	4	-
AX42 Belt	J0197	1	2	3	1
H. D. Gearmotor 220V	A5319	1	1	1	-
Stirup Parts Sack		1	1	1	-
9" Pulley	J0355	1	2	3	1
Motor Mount	A5209	1	2	3	1
Flanger Bearing	J0003	2	4	6	2
Cast Elec. Junction Box	A5612	1	1	1	-
Fastir Manual	L1413	1	1	1	1
Safety Decal Packet	A3399	1	1	1	1
Mercury Switch Box		1	1	1	1
Track Bolt Sack		1	1	1	-
Mercury Switch w/Cord		-	1	2	1
Rot. Contact, Single Lead		1	1	(A)	-
Rot. Contact, Dual Lead		-	-	1 ph. only	-
TSK Parts Sack	A6809	-	-	-	1
Satalite Fastir Carriage	A8040	-	1	2	1
Primary Fastir Carriage	A8041	1	1	1	-
Rev. Plate & Bolts	A8034	2	2	2	-
1" Dbl Pillow Block Brg.	A5649	1	1	1	-
1 x 18 Hanger Pipe	A8071	1	1	1	-
"S" Motor		1	-	-	-
"A" Motor		-	1	1	1
"O" Motor (if 1ph.)		-	1	2	-
"O" Motor (if 3ph.)		-	1	1	-
"B" Motor (if 3ph.)		-	-	1	-

(A) Use Single Lead on Triple 3 ph.